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Clinical Practice Guidelines for the Appropriate Use of Psychotropic Medications in People Living with Dementia and in Residential Aged Care

Technical Report Part 2

Results of Systematic Search and Evidence Synthesis

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- NHMRC Partnership Centre for Dealing with Cognitive and Related Functional Decline in Older People: Clinical Practice Guidelines and Principles of Care for People with Dementia (2016)
- American Psychiatric Association Practice Guideline on the Use of Antipsychotics to Treat Agitation or Psychosis in Patients with Dementia (2016)
- Canadian Family Physician Clinical Practice Guidelines: Deprescribing Antipsychotics for Behavioural and Psychological Symptoms of Dementia and Insomnia (2018)

Permission to update and adapt guidelines was sought from respective authors. On clinical topics where the *update and adapt* approach was taken, evidence was always evaluated by the Guideline Development Group and considered within the Australian context.

Table of Contents

In people living with dementia and changed behaviours, what are the risks and benefits of antipsychotic medication use compared to not using antipsychotics?

The Australian Clinical Practice Guidelines and Principles of Care for People with Dementia (2016) was selected as the most relevant guideline to adapt and update, when considering the risks and benefits of antipsychotics (1). The Australian Clinical Practice Guidelines and Principles of Care for People with Dementia (2016) used three index systematic reviews to inform and formulate their recommendations. The evidence update was performed from 2014.

PICO

PICO	
Population	People living with dementia
Intervention	Antipsychotics
Comparator	No treatment or placebo
Outcomes	Changed behaviours - Critical Mortality - Critical Quality of Life - Critical Serious Adverse Events - Critical Adverse Events - Important Resident Satisfaction - Important Caregiver Burden - Important Health Resource Use - Important

Inclusion and Exclusion Criteria

Inclusion/exclusion criteria	
Publication type	Inclusion: Available in the English language Exclusion: Reports, commentaries, conference proceedings
Population	Inclusion: People living with dementia Exclusion: People living with dementia receiving palliative care or end of life care
Intervention	Inclusion: Use of antipsychotics (specifically, amisulpride, aripiprazole, asenapine, brexpiprazole, chlorpromazine, clozapine, droperidol, flupentixol, haloperidol, lurasidone, olanzapine, paliperidone, periciazine, quetiapine, risperidone, ziprasidone, clopenthixol) Exclusion: Studies focused on treatment of conditions other than changed behaviours (delirium or other mental health conditions), studies focused on treating cognitive symptoms with no reference to changed behaviours treatment
Comparator	Inclusion: No antipsychotic use: • Placebo • Usual care Exclusion: NA
Outcomes	Inclusion: Changed behaviours, quality of life, mortality, adverse events, serious adverse events, patient/resident satisfaction, caregiver burden,

	health resource use. Studies that reported multiple time points for outcomes of interest will be included. Exclusion: NA
Setting	Inclusion: Residential aged care facilities and/or receiving high-level care packages (and may still be in the community or transition or other) Exclusion: Acute hospital setting
Study design	Inclusion: Systematic reviews of randomised controlled trials (RCTs) and RCTs Exclusion: NA

Search Results

Search results		
Date	**Database**	**Number of search results**
8 April 2021	Ovid MEDLINE	330
12 April 2021	Ovid Embase	926
12 April 2021	PsychINFO	217
22 April 2021	CINAHL	383
12 April 2021	CENTRAL	667
The evidence update was performed from 2014 to April 2021, please refer to Appendix 3 for search strategies		

Results

A total of 2594 citations were identified from systematic search. After removal of duplicates, 1751 articles were screened for eligibility based on title and abstract. 19 articles were selected for a full text screen. Only the most comprehensive and relevant systematic reviews were selected. No major clinical trials were identified that may impact the strength or direction of the Guideline recommendations.

The systematic search identified three citations, from two recent randomised controlled trials (RCT). Both these studies assessed antipsychotics that are not currently listed on the Pharmaceutical Benefits Scheme (PBS) for indications relating to changed behaviours. While numerous relevant systematic reviews were identified, no identified reviews contained new studies since before 2014.

The three index systematic reviews used to inform The Australian Clinical Practice Guidelines and Principles of Care for People with Dementia (2016) were adopted and outcomes data was extracted and presented. When possible, relevant outcomes from the two new RCTs were extracted and reanalysed.

A common issue encountered in the evidence update and synthesis was the varying availability and consistency of outcomes data for first-generation antipsychotics (FGAs) and second-generation antipsychotics (SGAs). The heterogeneity of reported data from FGAs and SGA made it difficult to pool data that was representative of both FGAs and SGAs. Therefore, when collecting and presenting evidence, FGAs and SGAs were treated separately. This was also considered to be more clinically relevant.

There were some outcomes in which the systematic search did not yield relevant information for critical outcomes, in particular outcomes related to harms associated with antipsychotics. If the project team was unable to identify appropriate data from RCT evidence, it was considered reasonable to perform a pragmatic search to identify systematic reviews that included data from observational studies. The pragmatic search was performed on PubMed

on June 21 2021 and was restricted to systematic review publications. The following search terms were used in the pragmatic search “antipsychotic” AND “dementia”.

Reanalysis with Additional Studies

A reanalysis of agitation was performed to include data from Grossberg et al (2), standard mean difference (SMD) was used as the effect size. A reanalysis of psychosis was also performed to include data from Ballard et al (3, 4), standard mean difference was use as the effect size. Data on harms (adverse event and serious adverse events) was too heterogenous to pool and reanalyse.

Study level data was not presented by Maher et al (5) in the analysis of SGAs and harms (stroke, cardiovascular event, sedation and extrapyramidal symptoms). However, the authors did provide event data at a medication type subgrouping for each above-mentioned adverse events. The event data was combined from each medication class to provide the harms data for SGAs.

Primary Studies

Outcome	Study Details
Agitation	**Primary study** Grossberg et al. Efficacy and Safety of Brexpiprazole for the Treatment of Agitation in Alzheimer's Dementia: Two 12-Week, Randomised, Double-Blind, Placebo-Controlled Trials. American Journal of Geriatric Psychiatry 2019 **Summary** The study considered SGA brexpiprazole, and found that 2mg/day dosing in people living with dementia was associated with a significant reduction in Cohen-Mansfield Agitation Inventory (CMAI) total score from baseline to 12 weeks (adjusted mean difference, -3.77; CI, -7.38, -0.17; p= 0.040). However, brexpiprazole 1mg/day did not show significance difference from placebo (0.23; CI, -3.40, 3.86; p= 0.90). Reported adverse effects associated with brexpiprazole included: headache (9.3% versus 8.1% with placebo), insomnia (5.7% versus 4.4%), dizziness (5.7% versus 3.0%), and urinary tract infection (5.0% versus 1.5%). (2)
Psychosis	**Primary study** Ballard et al. Pimavanserin in Alzheimer's Disease Psychosis: Efficacy in Patients with More Pronounced Psychotic Symptoms. Journal of Prevention of Alzheimer's Disease 2019 (subgroup analysis and was not included in reanalysis) Ballard et al. Evaluation of the safety, tolerability, and efficacy of pimavanserin versus placebo in participants with Alzheimer's disease psychosis: a phase 2, randomised, placebo-controlled, double-blind study. The Lancet Neurology 2018 **Summary** The study considered SGA pimavanserin, and found that 34mg dosing in people living with dementia was associated with a mean change in the Neuropsychiatric Inventory–Nursing Home Version (NPI-NH) psychosis score at week 6 (-3.76 points, SE 0.65 and for placebo -1.93

	points, 0.63; mean difference -1.84 [95% CI -3.64 to -0.04]; Cohen's d= -0.32; p= 0.045).). By week 12, no significant advantage for pimavanserin versus placebo was observed for the overall study population (treatment difference –0·51 [95% CI –2·23 to 1·21]; p= 0·56). (3, 4) A prespecified subgroup analysis showed that in participants with more severe psychotic symptoms (NPI–NH psychosis score ≥12), the adjusted mean change of the score from baseline to week 6 was –10·15 (95% CI –12·50 to –7·80) for pimavanserin and –5·72 (–8·14 to –3·30) for placebo (mean difference –4·43 [95% CI –7·81 to –1·04], Cohen's d=–0·73; p=0·011). In participants with mild psychotic symptoms (NPI–NH psychosis score <12), the adjusted mean change of the score from baseline to week six was –0·58 (95% CI –2·10 to 0·95) for pimavanserin and –0·16 (–1·60 to 1·28) for placebo (mean difference –0·42 [95% CI –2·52 to 1·68], Cohen's d=–0·077; p=0·694). Pimavanserin showed an acceptable tolerability profile and without negative effect on cognition, function, global outcomes or motor symptoms over 12 weeks. (3, 4)

Risk of Bias

	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Overall
Ballard	Low	Low	Low	Low	Low	Low
Grossberg	Low	Some concerns	Low	Low	Some concerns	Some concerns
The Cochrane Risk of Bias 2 tool was used.						

Outcomes	Results
Second-Generation Antipsychotics	
Changed Behaviours	**Index systematic review** Maglione et al. Off-Label Use of Atypical Antipsychotics: An Update. Comparative Effectiveness Review No. 43. Agency for Healthcare Research and Quality 2011 **Summary** **Changed behaviours - Overall** Evidence was gathered from 16 studies, 5220 participants with follow up between six and 12 weeks. The review included people living with dementia or Alzheimer's disease. Setting was outpatient or residential aged care. Outcomes were measured by Neuropsychiatric Inventory (NPI). Flexible dosing was used in almost all studies, doses ranged from; aripiprazole 2-10mg, olanzapine 1-15mg, quetiapine 25-200mg and risperidone 0.5-2.5mg. Evidence from a pooled analysis of 16 studies showed that antipsychotic use may result in small difference in changed behaviours in people living with dementia compared to placebo. All types of SGAs show very small or no benefit for changed behaviours (6). **Changed behaviours - Agitation** Evidence was gathered from 16 studies, 5220 participants with follow up between six and 12 weeks. The review included people living with dementia or Alzheimer's disease. Setting was outpatient or residential aged care. Agitation was measured by subscales of the Behavioral Pathology in Alzheimer's Disease Rating Scale (BEHAVE-AD), Brief Psychiatric Rating Scale (BPRS), NPI, and CMAI and included the symptoms such as physical aggression, verbal aggression, excitability, oppositional behaviours, and excessive motor ability. Flexible dosing was used, ranging from aripiprazole 2-10mg, olanzapine 1-15mg, quetiapine 25-600mg, risperidone 0.5-4mg and brexpiprazole 2mg (6). Evidence from a pooled analysis of 18 studies demonstrated that SGAs use resulted in a slight reduction in agitation in people living with dementia compared to placebo. • Evidence indicates olanzapine, risperidone and aripiprazole have small benefit in treatment of agitation in people living with dementia compared to placebo. **Changed behaviours - Psychosis** Evidence was gathered from 15 studies, 5,727 participants with follow up between six and 12 weeks. The review included people living with dementia or Alzheimer's disease. Setting was outpatient or residential aged care. Psychosis was measured by subscales of the BEHAVE-AD, BPRS, and NPI, which focus primarily on delusions and hallucinations. Flexible dosing was used, ranging from aripiprazole 2-10mg, olanzapine 1-15mg, quetiapine 25-600mg and risperidone 0.5-4mg (6).

	Evidence from a pooled analysis of 17 studies demonstrated that SGAs use resulted in a slight reduction in psychosis in people living with dementia compared to placebo. Evidence indicates that risperidone has a small benefit in treatment of psychosis in people living with dementia (6).
Adverse Events	**Index systematic review** Maher et al. Efficacy and Comparative Effectiveness of Atypical Antipsychotic Medications for Off-Label Uses in Adults: A Systematic Review and Meta-analysis. JAMA 2011 **Summary** Evidence was gathered from people living with dementia. The SGAs included were aripiprazole, olanzapine, quetiapine and risperidone. In people living with dementia, the use of SGAs leads to a moderate increase in mortality. Use of antipsychotics increases stroke in people living with dementia. In people living with dementia, the use of SGAs leads to a moderate and important increase in cardiovascular events (cardiovascular symptoms, oedema, and vasodilatation). In people living with dementia, SGAs leads to a large and important increase in sedation. Antipsychotic use results in a moderate and important increase in extrapyramidal symptoms (EPSE) in people living with dementia (5).
Mortality	**Index systematic review** Schneider et al. Risk of death with atypical antipsychotic drug treatment for dementia: meta-analysis of randomised placebo-controlled trials. JAMA 2005 **Summary** Evidence was gathered from 15 studies, 3353 participants with follow up between 10 and 12 weeks. The review included people living with dementia or Alzheimer's disease. Setting was outpatient and residential aged care. Flexible dosing was used, ranging from aripiprazole 2-10mg, olanzapine 1-15mg, quetiapine 25-600mg and risperidone 0.5-4mg. In people living with dementia, the use of SGAs leads to a moderate and important increase in mortality (7).
Quality of Life	We were unable to identify a systematic review that assessed this outcome for antipsychotics compared to placebo.
Caregiver Burden	We were unable to identify a systematic review that assessed this outcome for antipsychotics compared to placebo.
Patient/Resident Satisfaction	We were unable to identify a systematic review that assessed this outcome for antipsychotics compared to placebo.

Health resource use	We were unable to identify a systematic review that assessed this outcome for antipsychotics compared to placebo.
First-Generation Antipsychotics	
Changed Behaviours	**Index systematic review** Lonergan et al. Haloperidol for agitation in dementia. Cochrane Database Syst Rev. 2002 **Summary** Evidence was gathered from four studies, 369 participants with follow up between six to 16 weeks. The review included people living with dementia or Alzheimer's disease. Setting included outpatient, hospital and residential aged care. Only haloperidol was examined. Flexible dosing was used, ranging from haloperidol 0.25-3mg. Evidence from a pooled analysis of four studies indicates that haloperidol slightly reduces changed behaviours - overall. Evidence from a pooled analysis of four studies indicates that haloperidol results in a slight reduction in agitation (8).
Adverse Events	**Index systematic review** Lonergan et al. Haloperidol for agitation in dementia. Cochrane Database Syst Rev. 2002 **Summary** Evidence was gathered from one study, 204 participants, with follow up of three weeks. The review included people living with dementia or Alzheimer's disease. Setting was hospital and residential aged care. Only haloperidol was examined and mean dose was 3.5mg/day. Evidence from one study indicates that haloperidol may increase extrapyramidal symptoms (adverse events) (8).
Serious Adverse Events - Stroke	**Index systematic review** Hsu et al. Antipsychotics and the Risk of Cerebrovascular Accident: A Systematic Review and Meta-Analysis of Observational Studies. J Am Med Dir Assoc. 2017 **Summary** Evidence was gathered from four observational studies with a total of 26,882 participants. The review included people living with dementia using FGAs. Sources of data were from administrative and claims data sets and included community and hospital setting. Evidence from a pooled analysis of four observational studies indicates FGAs may increase stroke (serious adverse event) (moderate effect) (9).

	Hsu et al. noted that: *"Our overall findings are consistent with the results reported in 2 previous systematic reviews, which suggest antipsychotics may trigger cerebrovascular events. The subgroup analyses that evaluated all studies without dementia patients showed increased risk of CVA for FGAs (OR 1.97; 95% CI 1.42-2.73; I^2 = 38.2%). Users of FGAs were found to have a 1.5-fold greater risk of CVA when compared with nonusers." (9)*
Mortality	**Index systematic review** Tessa et al. The Mortality Risk of Conventional Antipsychotics in Elderly Patients: A Systematic Review and Meta-analysis of Randomised Placebo-Controlled Trials. Journal of the American Medical Directors Association 2015 **Summary** Evidence was gathered from 17 studies comprised of 2387 participants, with follow up ranging between 2.5 weeks and 16 weeks. The review included older people (>65 years old) with diagnosed dementia, or delirium, or were frail and at risk of delirium. Fourteen studies were performed in participants living with Alzheimer's or vascular dementia. Setting was hospital and residential aged care. Flexible dosing was used for the FGAs examined, ranging from haloperidol (0.5-3mg), trifluoperazine (4-8mg), thioridazine (62.5mg, mean), loxapine (10.5mg, mean), perphenazine (6.5mg, mean) and thiothixene (6-15mg). Evidence from a pooled analysis of 17 studies indicates that FGAs results in no difference in mortality compared to placebo (10). Tessa et al. noted that *"The authors found that from RCT evidence alone, conventional antipsychotics (1.07 95% CI 0.54-2.13) in general or haloperidol (1.25 95% CI 0.59-2.65), in particular increase the risk of mortality in elderly patients. It questions the observational findings and the warning based on these findings." (10)*
Quality of Life	We were unable to identify a systematic review that assessed this outcome for antipsychotics compared to placebo.
Caregiver Burden	We were unable to identify a systematic review that assessed this outcome for antipsychotics compared to placebo.
Patient/Resident Satisfaction	We were unable to identify a systematic review that assessed this outcome for antipsychotics compared to placebo.
Health Resource Use	We were unable to identify a systematic review that assessed this outcome for antipsychotics compared to placebo.

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Evidence Table

PICO
Population: People living with dementia
Intervention: Second generation antipsychotics
Comparator: Placebo

Outcome Timeframe	**Study results and measurements**	**Absolute effect estimates**		**Certainty of the Evidence** (Quality of evidence)	**Plain language summary**
		No use of antipsychotics	Second generation antipsychotics		
Mortality	Relative risk: 1.65 (CI 95% 1.19 - 2.29) Based on data from 5110 participants in 15 studies[1] Follow up 10-12 weeks	**21.6** per 1000	**35.64** per 1000	**High** [2]	SGA use increases mortality in people living with dementia
		Difference: **14.04 more per 1000** (CI 95% 4.1 more - 27.86 more)			
Serious Adverse Event - Stroke	Relative risk: 1.36 (CI 95% 0.79 - 2.35) Based on data from 3381 participants in 11 studies[3]	**13.5** per 1000	**18.36** per 1000	**Low** Due to serious inconsistency and serious imprecision[4]	SGA use may increase stroke in people living with dementia
		Difference: **4.86 more per 1000** (CI 95% 2.83 fewer - 18.23 more)			
Adverse Event - Sedation	Relative risk: 2.44 (CI 95% 2.08 - 2.87) Based on data from 5279 participants in 19 studies[5]	**79.9** per 1000	**194.96** per 1000	**High** [6]	SGA use results in a large increase in sedation in people living with dementia
		Difference: **115.06 more per 1000** (CI 95% 86.29 more - 149.41 more)			
Adverse Events - Extrapyramidal Symptoms	Relative risk: 2.19 (CI 95% 1.65 - 2.91) Based on data from 4408 participants in 13 studies[7]	**34.4** per 1000	**75.34** per 1000	**Moderate** Due to serious inconsistency[8]	SGA use probably increases extrapyramidal symptoms in people living with dementia
		Difference: **40.94 more per 1000** (CI 95% 22.36 more - 65.7 more)			

Adverse Event - Cardiovascular Event[9]	Relative risk: 1.84 (CI 95% 1.42 - 2.39) Based on data from 5081 participants in 15 studies[10]	**38.4** per 1000	**70.66** per 1000	**High** [11]	SGA use increases cardiovascular events in people living with dementia
		Difference: **32.26 more per 1000** (CI 95% 16.13 more - 53.38 more)			
Changed Behaviours - Psychosis[12]	Measured by: Pooled analysis Scale: - Lower better Based on data from 5727 participants in 15 studies[13] Follow up 6-12 weeks			**Moderate** Due to serious imprecision: Pooled estimates for each type of SGA are showing small to no effect[14]	SGA use probably results in a slight reduction in psychosis in people living with dementia compared to placebo
		Difference: **SMD 0.12 lower** (CI 95% 0.05 lower - 0.20 lower)			
Changed Behaviours - Agitation[15]	Measured by: Pooled analysis Scale: - Lower better Based on data from 5220 participants in 16 studies[16] Follow up 6-12 weeks			**Moderate** Due to serious imprecision. Pooled estimates for each type of SGA are showing small to no effect. [17]	SGA use probably results in a slight reduction in agitation in people living with dementia compared to placebo
		Difference: **SMD 0.20 lower** (CI 95% 0.13 lower - 0.27 lower)			
Changed Behaviours - Overall[18]	Measured by: Pooled analysis Scale: - Lower better Based on data from 5650 participants in 14 studies[19] Follow up 6-12 weeks			**Low** Due to serious inconsistency: Overall pooled estimate indicates some unexplained heterogeneity (I^2 = 44%, P = 0.03). Due to serious imprecision: Pooled estimates for each type of SGA are showing small to no effect.[20]	SGA use may result in result in little to no difference in changed behaviours in people living with dementia compared to placebo
		Difference: **SMD 0.17 lower** (CI 95% 0.08 lower - 0.25 lower)			
Quality of Life				No studies reported this outcome	No studies were found that looked at quality of life

Resident Satisfaction			No studies reported this outcome	No studies were found that looked at resident satisfaction
Caregiver Burden			No studies reported this outcome	No studies were found that looked at caregiver burden
Health Resource Use			No studies reported this outcome	No studies were found that looked at health resource use

1. Systematic review [1]. **Baseline/comparator** Systematic review. Supporting references [5].
2. **Risk of Bias: no serious.** Individual risk of bias assessment not available in published reports, however the authors did not identify any serious risk of bias. ; **Inconsistency: no serious.** The pooled OR for each medication type is consistent between the atypical antipsychotics, The confidence interval of some of the studies do not overlap with those of most included studies/ the point estimate of some of the included studies.; **Indirectness: no serious.** The included studies involve people living with dementia. **Imprecision: no serious.** The 95% CIs of the total pooled relative risk are showing small and important harm. Low event rates (n = 159) with large sample size (n = 5204) therefore, we did not downgrade the quality of evidence for imprecision; **Publication bias: no serious.** Authors did not detect publication bias via funnel plot
3. Systematic review [2]. **Baseline/comparator** Control arm of reference used for intervention
4. **Risk of Bias: no serious.** Individual risk of bias assessment not available in published reports. ; **Inconsistency: serious.** We were unable to attain study level effect estimates; we were only able to attain antipsychotic type level odds ratios. When comparing the OR and CI between the medication types, the direction of the effect for each medication type is inconsistent. Risperidone and Olanzapine show an increase in OR, and Aripiprazole and Quetiapine show a decrease in OR. , The confidence interval of some of the studies do not overlap with those of most included studies/ the point estimate of some of the included studies.; **Indirectness: no serious.** The included studies involve people living with dementia. **Imprecision: serious.** While the 95% CI is not wide, the pooled relative risk includes both no harm and appreciable harm, which makes effect is unclear. The event rate is low (n = 55) and large sample size (n = 3381).
5. Systematic review [2]. **Baseline/comparator** Control arm of reference used for intervention. Supporting references [2].
6. **Risk of Bias: no serious.** Individual risk of bias assessment not available in published reports; **Inconsistency: no serious.** We were unable to attain study level effect estimates; we were only able to attain antipsychotic type level odds ratios. When comparing the OR and CI between the medication, all CI overlap and all direction of effects are consistent **Indirectness: no serious.** The included studies involve individuals with dementia. **Imprecision: no serious.** The 95% CIs of the pooled relative risk is showing important harm;
7. Systematic review [2]. **Baseline/comparator** Control arm of reference used for intervention
8. **Risk of Bias: no serious.** Individual risk of bias assessment not available in published reports; **Inconsistency: serious.** We were unable to attain study level effect estimates; we were only able to attain antipsychotic type level odds ratios. There is some inconsistency when comparing the pooled OR and CI between the medications. Some CI are narrow and overlap, the exception of those for olanzapine for which only one trial had available results. All the effect sizes are consistent in direction. The confidence interval of some of the studies do not overlap with those of most included studies/ the point estimate of some of the included studies.; **Imprecision: no serious.** The 95% CIs of the pooled relative risk is showing important harm.
9. Includes participants who experienced cardiovascular symptoms, edema, and vasodilatation
10. Systematic review [2]. **Baseline/comparator** Control arm of reference used for intervention. Supporting references [2].
11. **Risk of Bias: no serious.** Individual risk of bias assessment not available in published reports; **Inconsistency: no serious.** We were unable to attain study level effect estimates, we were only able to attain antipsychotic type level odds ratios, when comparing the OR and CI between the medications. All CI overlap and the direction of effect is consistent. **Indirectness: no serious.** The included studies involve people living with dementia; **Imprecision: no serious.** The 95% CIs of the pooled relative risk is showing important harm; **Publication bias: no serious.** No evidence for publication bias;
12. Psychosis was measured by subscales of the Behavioral Pathology in Alzheimer's Disease Rating Scale (BEHAVE-AD), Brief Psychiatric Rating Scale (BPRS), and Neuropsychiatric Inventory (NPI), which focus primarily on delusions and hallucinations.
13. Systematic review [5]. **Baseline/comparator** Control arm of reference used for intervention. Supporting references [2].
14. **Risk of Bias: no serious.** Most studies had low risk of bias, several studies were rated as medium risk of bias because the method of sequence generation was unclear. **Inconsistency: no serious.** All studies overlap (CI overlap, I^2 = 33%, P = 0.09), The magnitude of statistical heterogeneity was high, with I^2:33%., The confidence interval of some of the studies do not overlap with those of most included studies/ the point estimate of some of the included studies.; **Indirectness: no serious.** Studies measure psychosis in BPSD in individuals living in

residential aged care or out-patients, which is directly related to the PICO question; **Imprecision: serious.** The overall pooled estimate favours antipsychotic as the CI does not cross no effect (SMD 0.12, 95% CI 0.05, 0.20). However, subgrouping pooled estimates for Quetiapine, Aripiprazole and Olanzapine are showing no effect. Pimavanserin is just sitting on no effect. Pooled estimates for Risperidone are showing small effect.

15. Agitation was measured by subscales of the BEHAVE-AD, Brief Psychiatric Rating Scale (BPRS), Neuropsychiatric Inventory (NPI), and Cohen-Mansfield Agitation Inventory, and included the symptoms physical aggression, verbal aggression, excitability, oppositional behaviors, and excessive motor ability
16. Systematic review [5]. **Baseline/comparator** Control arm of reference used for intervention. Supporting references [2].
17. **Risk of Bias: no serious.** Most studies had low risk of bias, several studies were rated as medium risk of bias because the method of sequence generation was unclear. **Inconsistency: no serious.** CIs are generally overlapping, and the majority of the studies show the point estimates are in the same direction of benefit. CI overlap, I^2 = 26%, P = 0.15, ; **Indirectness: no serious.** Studies measure agitation in BPSD in older people living in residential aged care and out-patients, which is directly related to the PICO question; **Imprecision: serious.** The overall pooled estimate favours antipsychotic medications as the CI does not cross no effect (SMD 0.20, 95% CI 0.13, 0.27). However, pooled estimates for Quetiapine and Brexpiprazole are showing no effect (therefore not different to placebo). Pooled estimates for Risperidone, Olanzapine, Aripiprazole are showing small effect.
18. Total global score includes psychiatric symptoms of delusions, suspiciousness, dysphoria, anxiety, motor agitation, aggression, hostility, euphoria, disinhibition, irritability and apathy, as measured by the Neuropsychiatric Inventory.
19. Systematic review [5] . **Baseline/comparator** Systematic review . Supporting references [2]. [5].
20. **Risk of Bias: no serious.** Most studies had low risk of bias, several studies were rated as medium risk of bias because the method of sequence generation was unclear. **Inconsistency: serious.** Overall pooled estimate indicates some unexplained heterogeneity (I^2 = 44%, P = 0.03). Close analysis of pooled estimates for individual antipsychotics reveals heterogeneity with Risperidone (I^2 = 74%, P = 0.002). For Risperidone, two studies (two studies (Brodaty and Debert) do not overlap and two studies (Deberdt and Mintzer) show opposite effect. **Indirectness: no serious.** Studies measure overall BPSD, which is directly related to the PICO questions; **Imprecision: serious.** Total sample size is over 4000, therefore reasonable overall. The overall pooled estimate favours antipsychotic as the CI does not cross no effect (SMD 0.17, 95% CI 0.08, 0.25). However, pooled estimates for Olanzapine, and Risperidone are sitting on no effect, therefore not different to placebo. Quetiapine is showing no effect. Pooled estimates for Aripiprazole is showing small effect.

References

[1] Schneider LS, Dagerman KS, Insel P : Risk of death with atypical antipsychotic drug treatment for dementia: meta-analysis of randomized placebo-controlled trials. JAMA. 2005;294(15):1934-43
[2] Maher AR, Maglione M, Bagley S, Suttorp M, Hu J-H, Ewing B, Wang Z, Timmer M, Sultzer D, Shekelle PG : Efficacy and comparative effectiveness of atypical antipsychotic medications for off-label uses in adults: a systematic review and meta-analysis. JAMA. 2011;306(12):1359-1369
[5] Maglione M, Maher AR, Hu J, Wang Z, Shanman R, Shekelle PG, Roth B, Hilton L, Suttorp MJ, Ewing BA, Motala A, Perry T : Off-Label use of atypical antipsychotics: An update. Comparative effectiveness review no. 43. Agency for Healthcare Research and Quality. 2011;

PICO

Population: People living with dementia
Intervention: First generation antipsychotic
Comparator: Placebo

Outcome Timeframe	**Study results and measurements**	**Absolute effect estimates**		**Certainty of the Evidence** (Quality of evidence)	**Plain language summary**
		Placebo	First generation antipsychotic		
Mortality[1]	Relative risk: 1.07 (CI 95% 0.54 - 2.13)	**10** per 1000	**11** per 1000	**Moderate**	

	Based on data from 2387 participants in 17 studies[2] Follow up 2.5 weeks -16 weeks	Difference: **1 more per 1000** (CI 95% 5 fewer - 11 more)		Due to serious imprecision[3]	FGA use has little to no difference on mortality compared to placebo.
Serious Adverse Event - Stroke	Odds ratio: 1.48 (CI 95% 1.24 - 1.77) Based on data from 67301 participants in 6 studies[4]	per 1000	per 1000	**Very low** Due to observational data, Due to serious indirectness, Due to serious inconsistency[5]	We are uncertain whether FGAs increases or decreases serious adverse event - stroke
		Difference: **fewer per 1000**			
Adverse Event - Extrapyramidal Symptoms[6]	Odds ratio: 2.34 (CI 95% 1.25 - 4.38) Based on data from 204 participants in 1 studies[7] Follow up 3 weeks	**175** per 1000	**332** per 1000	**Low** Due to serious risk of bias and serious imprecision[8]	Haloperidol may increase adverse event - extrapyramidal symptoms compared to placebo
		Difference: **157 more per 1000** (CI 95% 35 more - 307 more)			
Changed Behaviours - Agitation[9]	Measured by: Pooled analysis Scale: - Lower better Based on data from 369 participants in 4 studies[10] Follow up 3 weeks-16 weeks			**Low** Due to serious risk of bias, Due to serious imprecision. For all four trials, there was inadequate concealment of allocation during randomization process, resulting in potential for selection bias and the overall pooled estimate crosses the null.[11]	Haloperidol may result in a slight reduction in agitation in people living with dementia compared to placebo
		Difference: **SMD 0.12 lower** (CI 95% 0.33 lower - 0.08 higher)			
Changed Behaviours - Overall[12]	Measured by: Pooled analysis Scale: - Lower better Based on data from 369 participants in 4 studies[13]			**Low** Due to serious risk of bias. Due to serious imprecision. The overall pooled estimate is just	Haloperidol may improve changed behaviours slightly in people living with dementia compared to placebo
		Difference: **SMD 0.19 lower** (CI 95% 0.40 lower - 0.01 higher)			

	Follow up 3 weeks-16 weeks		sitting on no effect. Small sample size.[14]	
Caregiver Burden[15]	Measured by: Screen for Caregiver Burden (SCB) Scale: 0 - 25 Lower better Based on data from 70 participants in 1 studies[16] Follow up 16 weeks	Difference: **MD 0.81 higher** (CI 95% 0.89 lower - 2.51 higher)	**Low** Due to serious risk of bias. There was inadequate concealment of allocation during randomization process, resulting in potential for selection bias. Due to serious imprecision. Only data from one study, Sample size is small[17]	Haloperidol may not improve caregiver burden
Quality of Life			No studies reported this outcome	No studies were found that looked at quality of life
Resident Satisfaction			No studies reported this outcome	No studies were found that looked at resident satisfaction
Health Resource Use			No studies reported this outcome	No studies were found that looked at health resource use

1. Intervention included: Typical antipsychotics type (dose range): Haloperidol (0.5-3.0mg), trifluoperazine (4.0-8.0mg) , Thioridazine (62.5mg mean), Loxapine (10.5 mg (mean)), Perphenazine(6.5mg (mean)), Thiothixene (6.0-15mg)
2. Systematic review [204]. **Baseline/comparator** Control arm of reference used for intervention.
3. **Indirectness: no serious.** While the review included studies not specific to people living with dementia all studies were in older people and fourteen studies were performed in people living with Alzheimer's or vascular dementia. ; **Imprecision: serious.** Due to wide confidence intervals includes appreciable harms and benefits. ;
4. Systematic review [206] . **Baseline/comparator** Control arm of reference used for intervention.
5. **Risk of Bias: no serious.** Studies were of high quality. ; **Inconsistency: serious.** The magnitude of statistical heterogeneity was high, with I^2:85.2% %. Authors explain this likely due to differences in study design, timing of antipsychotic exposure and diagnostic outcomes - so may not be unexplained heterogeneity. All CI are overlapping, except for one. Direction is consistent. ; **Indirectness: serious.** Differences between the population of interest (people living with dementia) and those studied (older people, inclusive of people living with dementia). One study included people living with schizophrenia. ;
6. Number suffering an adverse event (broken down by type) by endpoint - E (mean dose 3.5mg/day, endpoint 3 weeks)
7. Systematic review [19] with included studies: Allain 2000 **Baseline/comparator** Control arm of reference used for intervention.
8. **Risk of Bias: serious.** Inadequate concealment of allocation during randomization process, resulting in potential for selection bias; **Inconsistency: no serious.** Due to incomplete data; **Indirectness: no serious.** Trial conducted in hospitalised or residential aged care people living with Alzheimer's dementia. **Imprecision: serious.** Low number of participants;
9. Agitation (change from baseline) ITT

10. Systematic review [19] with included studies: Auchus 1997, Teri 2000, RIS-INT-24 DeDeyn, Devanand 1998 **Baseline/comparator** Control arm of reference used for intervention.
11. **Risk of Bias: serious.** For all 4 studies- inadequate concealment of allocation during randomization process, resulting in potential for selection bias. **Inconsistency: no serious.** All CI overlap, I^2 is 0, direction of effects is consistent. ; **Indirectness: no serious.** Studies measure agitation in older people living with Alzheimer's dementia living in residential aged care and out-patients, which is directly related to the PICOS question.; **Imprecision: serious.** Sample size is small; overall, the effect size is small. The overall pooled estimate and confidence intervals crosses the null;
12. Behavioural symptoms (change from baseline) ITT
13. Systematic review [19] with included studies: Auchus 1997, Teri 2000, RIS-INT-24 DeDeyn, Devanand 1998 **Baseline/comparator** Control arm of reference used for intervention.
14. **Risk of Bias: serious.** For all 4 studies- inadequate concealment of allocation during randomization process, resulting in potential for selection bias. ; **Inconsistency: no serious.** CI overlap. Point estimates are the same size and direction, except for one study that shows no benefit. I^2 = 0%, P = 0.77; **Indirectness: no serious.** Studies measure BPSD in older people living with Alzheimer's dementia living in residential aged care and out-patients, which is directly related to the PICOS question. ; **Imprecision: serious.** Wide confidence intervals. The overall pooled estimate is just sitting on no effect. The CI for individual studies favour placebo in all 4 studies. Small sample size. **Publication bias: no serious.** Authors looked at grey literature and don't mention detection of publication bias;
15. Caregiver burden (change from baseline) ITT
16. Systematic review [19] with included studies: Teri 2000 **Baseline/comparator** Control arm of reference used for intervention.
17. **Risk of Bias: serious.** Inadequate concealment of allocation during randomization process, resulting in potential for selection bias; **Inconsistency: no serious.** Only data from one study; **Indirectness: no serious.** Trial conducted in outpatients living with Alzheimer's dementia and measured caregiver burden ; **Imprecision: serious.** Only data from one study, Sample size is small;

References

[19] Haloperidol for agitation in dementia [Data only. When citing this record quote "Cochrane Database of Systematic Reviews 2002, Issue 2".].
[204] Hulshof TA, Zuidema SU, Ostelo RW, Luijendijk HJ : The mortality risk of conventional antipsychotics in elderly patients: a systematic review and meta-analysis of randomized placebo-controlled trials. J Am Med Dir Assoc. 2015;16(10):817-24
[206] Hsu W-T, Esmaily-Fard A, Lai C-C, Zala D, Lee S-H, Chang S-S, Lee C-C : Antipsychotics and the risk of cerebrovascular accident: a systematic review and meta-analysis of observational studies. J Am Med Dir Assoc. 2017;18(8):692-699

Should people living with dementia and changed behaviours be treated with second-generation antipsychotics compared to first-generation antipsychotics?

The American Psychiatric Association (APA) Guidelines were selected as the most appropriate guideline to be adapted and updated when considering the comparison of first-generation antipsychotics (FGAs) compared to second-generation antipsychotics (SGAs).

The APA Guidelines considered Maglione et al. Off-Label Use of Atypical Antipsychotics: An Update. Comparative Effectiveness Review No. 43. Agency for Healthcare Research and Quality 2011 (6).

PICO

PICO	
Population	People living with dementia
Intervention	Second-generation antipsychotics (SGAs)
Comparator	First-generation antipsychotics (FGAs)
Outcomes	Changed Behaviours - Critical Mortality - Critical Quality of Life - Critical Serious Adverse Events - Critical Adverse Events - Important Patient/Resident Satisfaction - Important Caregiver Burden - Important Health Resource Use - Of limited Important

Inclusion and Exclusion Criteria

Inclusion/exclusion criteria	
Publication type	Inclusion: Available in the English language Exclusion: Reports, commentaries, conference proceedings
Population	Inclusion: People living with BPSD or in residential aged care and people living with dementia who are receiving high-level care packages (and may still be in the community or transition or other) Exclusion: People living with dementia receiving palliative care or end of life care
Intervention	Inclusion: Use of SGAs (specifically, amisulpride, aripiprazole, asenapine, brexpiprazole, clozapine, lurasidone, olanzapine, paliperidone, quetiapine, risperidone or ziprasidone) Exclusion: Studies focused on treatment of conditions other than changed behaviours (delirium or other mental health conditions), studies focused on treating cognitive symptoms with no reference to changed behaviours treatment
Comparator	Inclusion: Use of FGAs (specifically, chlorpromazine, droperidol, flupentixol, haloperidol, pericyazine or zuclopenthixol) Exclusion: NA
Outcomes	Inclusion: Changed behaviours, quality of life, mortality, adverse events, serious adverse events, patient/resident satisfaction, caregiver burden, health resource use. Studies that reported multiple time points for outcomes of interest will be included. Exclusion: NA

Setting	Inclusion: Residential aged care or those who are receiving high-level care packages (and may still be in the community or transition or other) Exclusion: Acute hospital setting
Study design	Inclusion: Systematic reviews of RCTs and RCTs. Exclusion: NA

Search Results

Search results		
Date	**Database**	**Number of search results**
8 April 2021	Ovid MEDLINE	330
12 April 2021	Ovid Embase	926
12 April 2021	PsychINFO	217
22 April 2021	CINAHL	383
12 April 2021	CENTRAL	667
The evidence update was performed from 2014 to April 2021, please refer to Appendix 3 for search strategies		

Results

The systematic search was combined with clinical question one, please see section 0. No new studies were identified in the evidence update since 2014. The three index systematic reviews used to inform the APA Guidelines were adopted and outcomes data was extracted and presented. No major clinical trials were identified that may impact the strength or direction of the Guideline recommendations.

Maglione et al. provided data on haloperidol compared to placebo for the outcomes of *changed behaviours - overall* and *changed behaviours - agitation*, however no other outcome data from this comparison was assessed. This was due to the included studies either not presenting raw data or reporting incomplete data for pooling (6).

There were a number of gaps in the RCT literature and outcome data related to harm. To address the gap in outcomes related to the comparison of the harms of FGAs versus SGAs, a pragmatic search was performed on PubMed to identify systematic reviews that included data from observational studies, please refer to Section 2.4.1 for more details.

Systematic Review Evidence

Outcomes	Results
Changed Behaviours - Overall	**Index systematic review** Maglione et al. Off-Label Use of Atypical Antipsychotics: An Update. Comparative Effectiveness Review No. 43. Agency for Healthcare Research and Quality 2011 **Summary** **Changed behaviours - Overall** Evidence was gathered from five studies, 1063 participants with follow up between five weeks to 12 months. The review included people living with dementia in long-term care/residential aged care setting. The five trials all compared SGA to haloperidol. Dosing was flexible and included quetiapine (25-600mg/day), risperidone (1.1mg/day) or olanzapine (2.5-7.5mg/day) and haloperidol (ranged from 10 drops/0.5mg-12mg/day). Evidence from a pooled analysis of five studies indicates there is little to no difference in FGAs versus SGAs for the treatment of changed behaviours - overall (6). **Changed behaviours - Agitation** Evidence was gathered from four studies, 709 participants, with follow up between five weeks to 12 months. The review included people living with dementia in long-term care/residential aged care setting. The five trials all compared SGAs to haloperidol. Dosing was flexible and included quetiapine (25-600mg/day), risperidone (1.1mg/day) or olanzapine (2.5-7.5mg/day) and haloperidol (ranged from 10 drops/0.5mg-12mg/day). Evidence from a pooled analysis of five studies indicates there is little to no difference in FGAs versus SGAs for the treatment of changed behaviours – agitation (6).
Mortality	**Index Systematic Review** Jackson et al. Quantifying the role of adverse events in the mortality difference between first and second-generation antipsychotics in older adults: systematic review and meta-synthesis. PLoS One 2014 **Summary** Evidence was gathered from 12 observational studies, 237,768 participants. Sources of data were from examining administrative data sets (e.g., health and hospital records, pharmacy-linked claims data, Medicare claims). Follow up ranged from less than 30 days to 365 days. The review included a mix of older people(>65 years old) and people living with dementia (59,099 participants, 24%) using FGAs or SGAs. Setting included community and long-term care/residential aged care. Evidence from a pooled analysis of 12 observational studies indicates that FGAs increase mortality slightly (11).

Serious Adverse Events – Stroke	**Index Systematic Review** Jackson et al. Quantifying the role of adverse events in the mortality difference between first and second-generation antipsychotics in older adults: systematic review and meta-synthesis. PLoS One 2014 **Summary** Evidence was gathered from six observational studies, 152,448 participants. Sources of data were from examining administrative data sets (e.g., health and hospital records, pharmacy-linked claims data, Medicare claims). Follow up ranged from less than 90 days to 867 days. The review included a mix of older people (>65 years old) and people living with dementia (43,344 participants, 28%) using FGAs or SGAs. Setting included community and long-term care/residential aged care. Evidence from a pooled analysis of six observational studies is uncertain about the effect of FGAs versus SGAs on stroke (serious adverse event) (11).
Serious Adverse Events – Myocardial Infarction	**Index Systematic Review** Jackson et al. Quantifying the role of adverse events in the mortality difference between first and second-generation antipsychotics in older adults: systematic review and meta-synthesis. PLoS One 2014 **Summary** Evidence was gathered from two observational studies, 106,849 participants. Sources of data were from examining administrative data sets (e.g., health and hospital records, pharmacy-linked claims data, Medicare claims). Follow up ranged from less than 120 days to 180 days. The analysis examined older people (>65 years old) using FGAs or SGAs. Setting included community and long-term care/residential aged care. Evidence from a pooled analysis of six observational studies is very uncertain about the effect of FGAs compared to SGAs on myocardial infarction (serious adverse event) (11).
Quality of Life	We were unable to identify studies (RCTs or systematic review of RCTs) that assessed this outcome.
Resident Satisfaction	We were unable to identify studies (RCTs or systematic review of RCTs) that assessed this outcome.
Health Resource Use	We were unable to identify studies (RCTs or systematic review of RCTs) that assessed this outcome.

MONASH University

Evidence Table

PICO
Population: People living with dementia
Intervention: First generation antipsychotics
Comparator: Second generation antipsychotics

Outcome Timeframe	**Study results and measurements**	**Absolute effect estimates**		**Certainty of the Evidence** (Quality of evidence)	**Plain language summary**
		Second generation antipsychotics	First generation antipsychotics		
Mortality	Relative risk: 1.4 Based on data from 237768 participants in 12 studies[1] Follow up 30 days to 365 days			**Low** Due to serious risk of bias, Due to serious indirectness, Upgraded due to clear dose-response gradient.[2]	FGAs may increase mortality compared to SGA
		Difference: **fewer**			
Serious Adverse Event - Stroke	Relative risk: 1.4 Based on data from 152448 participants in 6 studies[3] Follow up <90 days to 867 days	**25.0** per 1000	**35.0** per 1000	**Very low** Due to serious inconsistency, Due to serious indirectness, Due to serious imprecision[4]	We are uncertain whether FGAs increases serious adverse event - stroke compared to SGAs.
		Difference: **10.0 more per 1000**			
Serious Adverse Event - Myocardial Infarction	Relative risk: 1.2 Based on data from 106849 participants in 2 studies[5] Follow up <120 days to 180 days	**10.0** per 1000	**12.0** per 1000	**Very low** Due to serious indirectness, Due to serious imprecision[6]	We are uncertain whether FGAs increases serious adverse event - myocardial infarction compared to SGAs.
		Difference: **2.0 more per 1000**			
	Measured by: Pooled analysis of multiple scales			**Low**	FGAs may have little or no difference on

Changed Behaviours - Agitation[7]	Scale: - Lower better Based on data from 709 participants in 4 studies[8]	Difference: **SMD 0.03 lower** (CI 95% 0.21 lower - 0.15 higher)	Due to serious inconsistency, Due to serious imprecision[9]	changed behaviours (agitation) compared to SGAs.
Changed Behaviours - Overall[10]	Measured by: Total/Global score Scale: - Lower better Based on data from 965 participants in 5 studies[11]	Difference: **SMD 0.16 lower** (CI 95% 0.47 lower - 0.16 higher)	**Low** Due to serious inconsistency, Due to serious imprecision[12]	SGAs may improve changed behaviours (overall), when compared to haloperidol.
Quality of Life			No studies reported this outcome	No studies were found that looked at quality of life
Adverse Events			No studies reported this outcome	No studies were found that looked at adverse events
Resident Satisfaction			No studies reported this outcome	No studies were found that looked at resident satisfaction
Caregiver Burden			No studies reported this outcome	No studies were found that looked at caregiver burden
Health Resource Use			No studies reported this outcome	No studies were found that looked at health resource use

1. Systematic review [208] . **Baseline/comparator** Control arm of reference used for intervention.
2. **Risk of Bias: no serious.** Only high quality observational studies were included. ; **Inconsistency: no serious.** Reported mortality was consistently associated with FGAs across 11/12 studies. ; **Indirectness: serious.** There are differences between the population of interest (people living with dementia) and those studied (older people). However, authors report that some analyses were restricted to people living with dementia and reported similar elevations in six-month mortality for FGAs compared to SGAs. ; **Imprecision: no serious.** There is no CI reported, however sample size is very large. ; **Upgrade: clear dose-response gradient.** Studies consistently demonstrated a dose-dependent increase in mortality for FGAs early after initiation, lasting for at least six months in older community-dwelling adults.;
3. Systematic review [208] . **Baseline/comparator** Control arm of reference used for intervention.

4. **Inconsistency: serious.** The direction of the effect is not consistent between the included studies. Some studies reported higher risk of stroke with FGAs, other reported a lower risk. ; **Indirectness: serious.** Differences between the population of interest (People living with dementia) and those studied (>65years old). 3/6 were in people living with dementia. ; **Imprecision: no serious.** Large Sample size, CI not provided. ;
5. Systematic review [208]. **Baseline/comparator** Control arm of reference used for intervention.
6. **Risk of Bias: no serious.** Only high quality observational studies were included. ; **Inconsistency: no serious.** From the two studies included one study report a HR =1.16 (0.91-1.48) and the another HR=1.23 (0.82-1.82). Direction is consistent and CI over overlap. ; **Indirectness: serious.** Differences between the population of interest (People living with dementia) and those studied (older people>65 years old). ; **Imprecision: no serious.** Large sample size, no CI provided. ;
7. Pooled analysis of scales
8. Systematic review [5] . **Baseline/comparator** Control arm of reference used for intervention.
9. **Inconsistency: serious.** Point estimates vary widely; **Indirectness: no serious.** Studies measure overall BPSD, which is directly related to the PICO questions. **Imprecision: serious.** Wide confidence intervals;
10. Total/Global score
11. Systematic review [5] . **Baseline/comparator** Control arm of reference used for intervention.
12. **Risk of Bias: no serious.** Studies are all RCTs and vary in quality from low to high quality based on their described randomization and blinding procedures and their descriptions of study dropouts; **Inconsistency: serious.** The direction of the effect is not consistent between the included studies. ; **Indirectness: no serious.** Studies measure overall BPSD, which is directly related to the PICO questions. **Imprecision: serious.** Wide confidence intervals;

References

[5] Maglione M, Maher AR, Hu J, Wang Z, Shanman R, Shekelle PG, Roth B, Hilton L, Suttorp MJ, Ewing BA, Motala A, Perry T : Off-Label use of atypical antipsychotics: An update. Comparative effectiveness review no. 43. Agency for Healthcare Research and Quality. 2011;

[208] Jackson JW, Schneeweiss S, VanderWeele TJ, Blacker D : Quantifying the role of adverse events in the mortality difference between first and second-generation antipsychotics in older adults: systematic review and meta-synthesis. PlOS one. 2014;9(8):e105376

For people living with dementia who have commenced on antipsychotic medication, should medication be discontinued?

The Canadian Family Physician Guidelines '*Deprescribing antipsychotics for behavioural and psychological symptoms of dementia and insomnia*' were considered (12). The Canadian Family Physician Guidelines adopted the Cochrane review by Declercq et al. *Withdrawal versus continuation of chronic antipsychotic drugs for behavioural and psychological symptoms in older people with dementia, 2013* (13) to inform and formulate recommendations. Prior to conducting a systematic search, a 2018 update on this Cochrane review was identified. From this 2018 update, the authors identified one source of unpublished data from 2011 for inclusion.

PICO

Population	People living with dementia who are taking antipsychotics
Intervention	Discontinuation of antipsychotics
Comparator	Continuation of antipsychotics
Outcomes	Changed Behaviours - Critical Mortality - Critical Quality of Life - Critical Serious Adverse Events - Critical Adverse Events - Important Patient/Resident Satisfaction - Important Caregiver Burden - Important Health Resource Use - of limited Important

Inclusion and Exclusion Criteria

Publication type	Inclusion: Available in the English language Exclusion: Reports, commentaries, conference proceedings
Population	Inclusion: People living with dementia who are taking antipsychotics Exclusion: People living with dementia receiving palliative care or end of life care
Intervention	Inclusion: Changes made to antipsychotics, specifically: • discontinuation • deprescribing • elimination • reducing • tapering • withdrawal • cessation • monitoring Exclusion: Studies focused on treatment of conditions other than changed behaviour (delirium or other mental health conditions), studies focused on treating cognitive symptoms with no reference to changed behaviour treatment
Comparator	Inclusion: Antipsychotics are: • Continued • Usual care • No intervention or changes made

	Exclusion: NA
Outcomes	Inclusion: Changed behaviour, quality of life, mortality, adverse events, serious adverse events, patient/resident satisfaction, caregiver burden, health resource use. Studies that report multiple time points for outcomes of interest will be included. Exclusion: NA
Setting	Inclusion: Residential aged care or receiving high-level care packages (and may still be in the community or transitioning) Exclusion: Acute hospital setting
Study design	Inclusion: Systematic reviews of RCTs and RCTs. Exclusion: NA

Search Results

The search was updated from January 2018, as per the last search date of the 2018 Cochrane review update, to April 2021.

Search results		
Date	**Database**	**Number of search results**
12 April 2021	Ovid MEDLINE	37
12 April 2021	Ovid Embase	200
12 April 2021	PsychINFO	18
22 April 2021	CINAHL	45
12 April 2021	CENTRAL	52
The evidence update was performed from 2018 to April 2021, please refer to Appendix 3 for search strategies		

Results

A total of 352 citations were identified from systematic search. After removal of duplicates, 299 articles were screened for eligibility based on title and abstracts. 20 articles were selected for a full text screen. Only the most comprehensive and relevant systematic review was selected for the evidence review. No major clinical trials were identified that may impact the strength or direction of the Guideline recommendations.

No new RCTs focused on the discontinuation of antipsychotics were identified. The evidence update considers the 2018 Cochrane review update by Van Leeuwen et al (13).

Van Leeuwen et al. found that the body of literature pertaining to withdrawal of antipsychotics was often too heterogeneous to allow for pooled analyses, and conclusions drawn were based on few studies with small sample sizes. Van Leeuwen et al. were able to pool two studies for data analysis on *changed behaviours*, other outcomes were reported in a narrative format. A re-assessment of the included studies from Van Leeuwen et al. was conducted by the project team to confirm any possibilities of pooling study outcomes data. Upon the reassessment, a combination of varying endpoints, lack of raw data and incomplete datasets prevented the pooling of data and further analysis. Van Leeuwen et al. found low-quality evidence that antipsychotics may be discontinued in older people living with dementia after at least three months. This is consistent with the observation that most changed behaviours are intermittent and do not persist for longer than three months. Van Leeuwen et al. concluded that discontinuation may not make a difference to adverse events and quality of life and were uncertain whether discontinuation of antipsychotics may lead to

a decrease in mortality at short- or long-term follow-up (13). Please refer to Section 3.4.1 for more details.

Systematic Review Evidence

Index Systematic Review

Van Leeuwen et al. Withdrawal versus continuation of long-term antipsychotic drug use for behavioural and psychological symptoms in older people with dementia. Cochrane Database of Systematic Reviews 2018

Evidence for this clinical question was gathered from the index systematic review, which included ten studies, 632 participants. Van Leeweun et al. included all RCTs comparing an antipsychotic withdrawal strategy to continuation of antipsychotics. Only studies that assessed people living with dementia who had been treated with an antipsychotic for a minimum of three months were included. Setting included community or residential aged care.

Different types of antipsychotics including chlorpromazine, haloperidol, thioridazine, thiothixene, trifluoperazine, mesoridazine, loxapine, and olanzapine. Doses of antipsychotics varied across studies. Abrupt and gradual withdrawal schedules were included.

Outcomes	**Results**
Changed Behaviours	**Summary** A pooled analysis of two studies demonstrated a slight improvement in mean difference (MD) of NPI scores in favour discontinuation of antipsychotic use (Ballard 2004, Ballard 2008). Participants with mild to moderate changed behaviours (baseline NPI scores at or below the median ≤ 14), who were allocated to the discontinuation group were less likely to develop changed behaviours. Participants with severe changed behaviours symptoms (higher baseline NPI scores > 14) were more likely to develop behavioural problems when antipsychotics were discontinued. In five studies (Devanand 2012, Ruths 2008, Bridges-Parlet, van Reekum) little or no difference in changed behaviours was observed between discontinuation compared to continuation groups. In one study (Bergh 2011, n=19), changed behaviours was reported to have decreased more in the continuation group (13).
Mortality	**Summary** Two studies reported on mortality; however, it is uncertain whether discontinuation of antipsychotics affects mortality. In one study (Ballard 2008, n=165), data was reported as a cumulative probability of survival at 12, 24 and 36 months. The cumulative probability of survival was slightly lower in the continuation group compared with the discontinuation group during the first 12 months, at 24 months and after 36 months. In the other study (Devanand 2012, n= 110), mortality was measured after 16 and 32 weeks. The results did not differ between the continuation and discontinuation groups (13).
Quality of Life	**Summary**

	Two studies reported on quality of life; however, it is uncertain whether discontinuation of antipsychotics improves quality of life. In one study (Ballard 2004, n=100) measuring quality of life, there was a small improvement in well-being in the discontinuation group and a slight worsening in the continuation group. In the other study (Bergh 2011, n=19), it was reported that there were no statistically significant differences between groups; however, no data were provided to support this conclusion (13).
Serious Adverse Events	No studies were found that reported on this outcome
Adverse Events	**Summary** While five studies recorded data on adverse events, the data was not collected systematically and various outcome measurements were used at various time points. It is uncertain whether discontinuation of antipsychotics affects adverse events. In the five studies (Ballard 2008, Bridges-Parlet 1997, Devanand 2012, Findlay 1989, van Reekum 2002) that contributed results to this outcome, discontinuation of antipsychotics showed to probably have little or no difference on adverse events (13).
Patient/Resident Satisfaction	No studies were found that reported on this outcome
Caregiver Burden	No studies were found that reported on this outcome
Health Resource Use	No studies were found that reported on this outcome

Evidence Table

PICO
Population: People living with dementia using antipsychotics
Intervention: Discontinuation of antipsychotic medication
Comparator: Continuation of antipsychotic medication

Outcome Timeframe	**Study results and measurements**	**Absolute effect estimates**		**Certainty of the Evidence** (Quality of evidence)	**Plain language summary**
		Continuation	Discontinuation		
Changed Behaviours - Overall[1]	Measured by: Neuropsychiatric Inventory (NPI) Score Scale: 1 - 144 Lower better Based on data from 194 participants in 2 studies[2] Follow up 3 months			**Moderate** Due to serious imprecision[3]	Discontinuation probably has little or no difference on changed behaviours (overall).
		Difference: **MD 1.49 lower** (CI 95% 2.40 higher - 5.39 lower)			
Resident Satisfaction				No studies reported this outcome	No studies were found that looked at resident satisfaction
Mortality[4]	Based on data from 275 participants in 2 studies Follow up 4 to 12 months			**Very low** Due to very serious risk of bias, Due to serious imprecision[5]	Data was unable to be pooled from two studies due different outcome measures being used, in one study cumulative probability of survival was assessed. We are uncertain whether

				discontinuation decreased mortality.
Serious Adverse Events			No studies reported this outcome	No studies were found that looked at serious adverse events
Quality of Life[6]	Based on data from 119 participants in 2 studies Follow up 3 months to 25 weeks		**Low** Due to serious risk of bias, Due to serious imprecision[7]	The measurement tools used in the two studies (dementia care mapping and QoL-AD) were too different to pool for an analysis to assess quality of life. We are uncertain whether discontinuation improves quality of life
Adverse Events[8]	Based on data from 381 participants in 5 studies Follow up 1 to 8 months		**Low** Due to serious risk of bias, Due to serious indirectness[9]	Outcomes for adverse events could not be pooled as none of the included studies systematically reported on all adverse events. Differences in available data were due to incomplete data reporting and varying timepoints. We are uncertain

				whether discontinuation has a difference on adverse events
Caregiver burden[10]			No studies reported this outcome	None of the included studies assessed caregiver burden
Health Resource Use			No studies reported this outcome	No studies were found that looked at health resource use

1. Changed behaviours were measured using the neuropsychiatric inventory (NPI) and neuropsychiatric inventory questionnaire (NPI-Q) score.
2. Systematic review [4] with included studies: Ballard 2008, Ballard 2004.
3. **Risk of Bias: no serious.** Due to risk of reporting bias - study authors' conclusions were not supported with reported data in four studies; **Imprecision: serious.** Wide confidence intervals, Low number of patients.
4. One study measured mortality as cumulative probability of survival (Ballard 2008).
5. **Risk of Bias: very serious.** Due to high dropout in both studies; **Imprecision: serious.** Low number of participants.
6. Measured with DCM (dementia care mapping) or QoL-AD (13-item questionnaire of the quality of life (QOL) for participants who have been diagnosed with Alzheimer Disease (AD))
7. **Risk of Bias: serious.** Due to reporting bias and attrition bias; **Imprecision: serious.** Low number of participants.
8. Outcomes reported included only a selection of adverse events in all studies and none were systematically recorded
9. **Risk of Bias: serious.** Due to high drop out rates and reporting bias - no data were provided to support the authors' conclusions in two studies; **Indirectness: serious.** due to not being systematically assessed.
10. None of the identified studies reported on caregiver burden.

References

[4] Withdrawal versus continuation of long-term antipsychotic drug use for behavioural and psychological symptoms in older people with dementia [Data only. When citing this record quote "Cochrane Database of Systematic Reviews 2018, Issue 3".].

In people living with dementia and changed behaviours, what are the risks and benefits of benzodiazepine use compared to not using benzodiazepines?

The Australian Clinical Practice Guidelines and Principles of Care for People with Dementia (2016) (1) was selected as the most relevant guideline to adapt and update, when considering the risks and benefits of benzodiazepines. The Australian Clinical Practice Guidelines and Principles of Care for People with Dementia used one RCT to inform their recommendation. The study by Meehan et al, was a three-armed RCT that assessed intramuscular lorazepam, olanzapine and placebo in people living with dementia with agitation (14). The evidence update was performed from 2014.

PICO

PICO	
Population	People living with dementia or in residential aged care
Intervention	Benzodiazepines
Comparator	No treatment or placebo
Outcomes	Changed Behaviours - Critical Mortality - Critical Quality of Life - Critical Serious Adverse Events - Critical Adverse Events - Important Patient/Resident Satisfaction - Important Caregiver Burden - Important Health Resource Use - Important

Inclusion and Exclusion Criteria

Inclusion/exclusion criteria	
Publication type	Inclusion: Available in the English language Exclusion: Reports, commentaries, conference proceedings
Population	Inclusion: People living with dementia Exclusion: People living with dementia receiving palliative care or end of life care
Intervention	Inclusion: Use of benzodiazepines (specifically, bromazepam, clobazam, diazepam, clonazepam, flunitrazepam, lorazepam, midazolam, nitrazepam, oxazepam, temazepam, antianxiety drug, anxiolytic, minor tranquilizer, minor tranquilliser, minor tranquillizer, muscle relaxant) Exclusion: Studies focused on treatment of conditions other than changed behaviours (delirium or other mental health conditions), studies focused on treating cognitive symptoms with no reference to changed behaviours/BPSD treatment
Comparator	Inclusion: No benzodiazepines use: • Placebo • No intervention Exclusion: NA
Outcomes	Inclusion: Changed behaviours, quality of life, mortality, adverse events, serious adverse events, patient/resident

	satisfaction, caregiver burden, health resource use. Studies that report multiple time points for outcomes of interest will be included. Exclusion: NA
Setting	Inclusion: Residential aged care and who are receiving high-level care packages (and may still be in the community or transition or other) Exclusion: Acute hospital setting
Study design	Inclusion: Systematic reviews of RCTs and RCTs. Exclusion: NA

Search Results

Search results		
Date	**Database**	**Number of search results**
13 April 2021	Ovid MEDLINE	370
13 April 2021	Ovid Embase	1115
13 April 2021	PsychINFO	114
22 April 2021	CINAHL	422
16 April 2021	CENTRAL	444
Date restriction 2014 onwards, please refer to Appendix 3 for search strategies		

Results

A total of 2465 citations were identified from systematic search. After removal of duplicates, 2180 articles were screened for eligibility based on title and abstract. Two citations were selected for a full text screen. No new RCTs or systematic reviews of RCTs were identified. No major clinical trials were identified that may impact the strength or direction of the Guideline recommendations.

Two narrative reviews were identified in the search that were relevant to the clinical topic. Both these narrative reviews did not conduct any data analyses and contained studies predating 2014, further confirming the lack of new evidence. The single RCT used to inform the source guideline was adopted and outcomes data on agitation was extracted and presented, refer to Section 4.4.1 Primary Studies for more information.

Due to the lack of RCT evidence on the benefits and harms of benzodiazepines, a pragmatic database search was performed to identify systematic reviews that included data from observational studies, screening of studies was inclusive of the broader population of older people (60 years and older). The pragmatic search was performed on PubMed and was restricted to systematic review publications. The reference lists of relevant articles were also searched to identify evidence. The following search terms were used in the pragmatic search “benzodiazepine” AND “dementia”.

Following this extensive search, three systematic reviews predating 2014 were identified and selected to inform on outcomes relating to benefits and harms in the evidence profile, refer to Section 4.4.2 for more information.

Primary Studies

Outcome	**Study Details**
Agitation	**Primary Study**

	Meehan et al. Comparison of rapidly acting intramuscular olanzapine, lorazepam, and placebo: a double-blind, randomised study in acutely agitated patients with dementia. Neuropsychopharmacology 2002 **Summary** This double-blind study investigated the efficacy and safety of rapid-acting intramuscular olanzapine, lorazepam and placebo in treating agitation associated with Alzheimer's disease and/or vascular dementia (14). A total of 272 participants were randomised to treatment. At two hours, lorazepam (1mg) showed significant improvement over placebo on the PANSS Excited Component (PANSS-EC) and Agitation–Calmness Evaluation Scale (ACES), and both 5mg olanzapine and lorazepam showed superiority to placebo on the CMAI (14). Improvement with lorazepam became significantly superior to placebo at the 60-minute time point (lorazepam: mean –7.47, standard deviation (*SD)* = 5.59, n = 68; placebo: mean –5.12, *SD* = 5.76, n = 66; $F_{1,266}$ = 6.44, *p* = .01), and this improvement was maintained until the 2-hour time point. No significant differences were found between patients in nursing home versus hospital setting on any measures of efficacy. At 24-hour, lorazepam did not maintain superiority over placebo on the PANSS-EC. Clinical response, defined a priori as ⩾40% improvement from baseline in PANSS-EC score, was achieved at 2-hour post first injection in 49 of the 68 lorazepam patients (72.1%; Fisher's exact test, *p*< 0.001 relative to placebo) compared with 25 of 67 patients (37.3%) in the placebo group (14). The PANSS-EC subscale consists of five items of the PANSS: poor impulse control, tension, hostility, uncooperativeness, and excitement. The overall mean baseline Mini-Mental State Examination (MMSE) score was 11.8 (*SD* = 7.1), indicating moderate cognitive impairment. Residents were significantly more cognitively impaired than those from hospital inpatient setting. Mean BPRS total score (possible range: 0–108) at baseline was 35.8 (*SD* = 10.4), indicating mild psychiatric illness, with residents again showing greater debilitation. The NPI-NH scores at baseline likewise indicated mild-to-moderate levels of psychotic and depressive/dysphoric symptomatology, and moderate levels of anxiety (14).

Risk of Bias

	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Overall
Meehan et al.	Some concerns	Some concerns	Low risk of bias	High risk of bias	Some concerns	High risk
The Cochrane Risk of Bias 2 tool was used.						

Systematic Review Evidence

Outcome	Systematic Review Details
Changed Behaviours – Sleep Disturbances	**Index systematic review** Glass et al. Sedative hypnotics in older people with insomnia: meta-analysis of risks and benefits. BMJ 2005 **Summary** Evidence was gathered from seven RCTs, 277 participants. The meta-analysis examined older people (>60 years old) with a pre-determined diagnostic criterion for insomnia. Setting was either residential aged care (2), inpatient (3), outpatient (1), or geriatric clinic (1). Benzodiazepines used included: loprazolam 1mg, nitrazepam 2.5-5mg, triazolam 0.125-0.25mg, flunitrazepam 1mg, brotizolam 0.125mg. A pooled analysis of seven studies found that benzodiazepines had a moderate effect in improving sleep quality in older people (>60 years old), with a standard mean difference of 0.37 (95% CI 0.01 – 0.73) (15).
Adverse Event - Falls	**Index Systematic Review** Seppala et al Fall-Risk-Increasing Drugs: A Systematic Review and Meta-Analysis: II. Psychotropics. Journal of the American Medical Directors Association 2018 **Summary** Indirect evidence from a meta-analysis of 14 studies on benzodiazepines and falls in older people reported an increase in odds (OR 1.42; 95% CI 1.22,1.65). This systematic review also reported that both short-acting benzodiazepines (OR 1.27; 95% CI 1.04,1.56) and long-acting benzodiazepines (OR 1.81; 95% CI 1.05,3.16) were associated with an increased risk of falls in older people.
Serious Adverse Event - Hip Fracture	**Index Systematic Review** Donnelly et al. Benzodiazepines, Z-drugs and the risk of hip fracture: A systematic review and meta-analysis. PLoS One 2017 **Summary** Evidence was gathered from observational studies (cross-sectional or case control), 553,364 participants. Donnelly et al. included older people, specifically studies with a study population with age of at least 50 years and with a mean age of over 65 years. Some data was extracted from administrative databases. Setting included community, residential aged care, hospital, but was not always reported. Indirect evidence from a meta-analysis of 15 observational studies found that

	benzodiazepines were associated with increased risk of hip fracture (RR 1.52; 95% CI 1.37,1.68) in older people in general, and this risk was highest at the start of treatment (16). When categorised according to the duration of benzodiazepine use and risk of hip fracture: • short-term use was associated with a 140% increased risk • medium-term use was associated with a 53% increased risk • long-term use was associated with a 20% increased risk No dose response was observed. Studies adjusted for a variety of covariates and factors, but none of the studies addressed non-registered drug use or concomitant alcohol use, so all plausible confounding factors causing the effect were not controlled (16).

Evidence Table

PICO
Population: People living with dementia
Intervention: Benzodiazepines
Comparator: No treatment or placebo

Outcome Timeframe	**Study results and measurements**	**Absolute effect estimates**		**Certainty of the Evidence** (Quality of evidence)	**Plain language summary**
		No treatment or placebo	Benzodiazepines		
Serious Adverse Event - Hip Fracture[1]	Relative risk: 1.52 (CI 95% 1.37 - 1.68) Based on data from 553364 participants in 15 studies[2]			**Low** [3]	Benzodiazepines may increase serious adverse event - hip fracture
		Difference: **fewer**			
Adverse Event - Falls	Odds ratio: 1.42 (CI 95% 1.22 - 1.65)			**Low**	

	Based on data from participants in 14 studies[4]	Difference: **fewer**		Due to serious inconsistency[5]	Benzodiazepines may increase adverse event - falls
Changed Behaviours - Agitation	Measured by: PANSS - excited component Scale: - Lower better Based on data from 135 participants in 1 studies[6] Follow up 2 hours	**-5.27** Mean	**-8.49** Mean	**Low** Due to serious imprecision, Due to serious risk of bias[7]	Benzodiazepines may improve changed behaviours - agitation
		Difference: **MD 3.22 lower** (CI 95% 5.49 lower - 0.95 lower)			
Changed Behaviours - Sleep Disturbances[8]	Measured by: Sleep quality Scale: - High better Based on data from 277 participants in 7 studies[9]	Mean	Mean	**Very low** Due to serious indirectness, Due to very serious imprecision, Due to serious risk of bias[10]	We are uncertain whether use of benzodiazepines improves or worsen changed behaviours - sleep disturbances
		Difference: **SMD 0.37 higher** (CI 95% 0.01 higher - 0.73 higher)			
Mortality				No studies reported this outcome	No studies were found that looked at mortality
Quality of Life				No studies reported this outcome	No studies were found that looked at quality of life
Resident Satisfaction				No studies reported this outcome	No studies were found that looked at resident satisfaction
Caregiver Burden				No studies reported this outcome	No studies were found that looked at caregiver burden
Health Resource Use				No studies reported this outcome	No studies were found that looked at health resource use

1. Pooled analysis of RCTs and observational studies evaluating the association between benzodiazepine use and hip fracture in older adults
2. Systematic review [166] . **Baseline/comparator**
3. **Inconsistency: no serious.** heterogeneity explained by categorising studies according to duration of benzodiazepine use; **Indirectness: no serious.** Differences between the population of interest and those studied. The study population were aged at least 50 years of age and with an average age over 65 years; **Publication bias: no serious.** Asymmetrical funnel plot;
4. Systematic review [128] . **Baseline/comparator** Control arm of reference used for intervention.
5. **Risk of Bias: no serious.** "intermediate and good quality studies"; **Inconsistency: serious.** The magnitude of statistical heterogeneity was high, with I^2:67%.; **Indirectness: no serious.** Differences between the population of interest (people living with dementia) and those studied (older people); **Imprecision: no serious.** CI is not wide ;
6. Primary study [70] **Baseline/comparator** Control arm of reference used for intervention. Supporting references [70].
7. **Risk of Bias: serious.** Inadequate sequence generation/ generation of comparable groups, resulting in potential for selection bias, Inadequate/lack of blinding of outcome assessors, resulting in potential for detection bias, Selective outcome reporting; **Imprecision: serious.** Low number of participants, only data from one study.
8. Soundness or depth of sleep.
9. Systematic review [75] . **Baseline/comparator** Control arm of reference used for intervention.
10. **Risk of Bias: serious.** Inadequate sequence generation/ generation of comparable groups, resulting in potential for selection bias; **Inconsistency: no serious.** All CI overlap. **Indirectness: serious.** Differences between the population of interest (people living with dementia) and those studied (older people with insomnia); **Imprecision: very serious.** Low number of participants, Wide confidence intervals; **Publication bias: no serious.** Funnel plot indicated possible publication bias, after adjusting via trim and fill, publication bias was not found

References

[70] Meehan KM, Wang H, David SR, Nisivoccia JR, Jones B, Beasley CM, Feldman PD, Mintzer JE, Beckett LM, Breier A : Comparison of rapidly acting intramuscular olanzapine, lorazepam, and placebo: a double-blind, randomized study in acutely agitated patients with dementia. Neuropsychopharmacology. 2002;26(4):494-504
[75] Glass J, Lanctôt KL, Herrmann N, Sproule BA, Busto UE : Sedative hypnotics in older people with insomnia: meta-analysis of risks and benefits. BMJ (Clinical research ed.). 2005;331(7526):1169
[166] Donnelly K, Bracchi R, Hewitt J, Routledge PA, Carter B : Benzodiazepines, Z-drugs and the risk of hip fracture: A systematic review and meta-analysis. PloS one. 2017;12(4):e0174730

For people living with dementia who have commenced a benzodiazepine, should the medication be discontinued?

Currently there is a lack of clinical practice guidelines that specifically cover the discontinuation of benzodiazepines in people living with dementia.

PICO

PICO	
Population	People living with dementia
Intervention	Discontinuation of benzodiazepines
Comparator	Continuation of benzodiazepines
Outcomes	Changed Behaviours - Critical Mortality - Critical Quality of Life - Critical Serious Adverse Events - Critical Adverse Events - Important Patient/Resident Satisfaction - Important Caregiver Burden - Important Health Resource Use - Of limited Important

Inclusion and Exclusion Criteria

Inclusion/exclusion criteria	
Publication type	Inclusion: Available in the English language Exclusion: Reports, commentaries, conference proceedings
Population	Inclusion: People living with dementia who are taking benzodiazepines Exclusion: People living with dementia receiving palliative care or end of life care
Intervention	Inclusion: Changes made to benzodiazepines, specifically: • discontinuation • deprescribing • elimination • reducing • tapering • withdrawal • cessation • monitoring Exclusion: Studies focused on treatment of conditions other than changed behaviours (delirium or other mental health conditions), studies focused on treating cognitive symptoms with no reference to changed behaviours treatment
Comparator	Inclusion: Benzodiazepines are: • Continued • Usual care • No intervention or changes made Exclusion: NA
Outcomes	Inclusion: Changed behaviours, quality of life, mortality, adverse events, serious adverse events, patient/resident satisfaction, caregiver burden, health resource use. Studies that report multiple time points for outcomes of interest will be included.

	Exclusion: NA
Setting	Inclusion: Residential aged care and those receiving high-level care packages (and may still be in the community or transition or other) Exclusion: Acute hospital setting
Study design	Inclusion: Systematic reviews of RCTs and RCTs Exclusion: NA

Search Results

Search results		
Date	**Database**	**Number of search results**
13 April 2021	Ovid MEDLINE	80
13 April 2021	Ovid Embase	75
13 April 2021	PsychINFO	17
22 April 2021	CINAHL	16
16 April 2021	CENTRAL	183
The evidence synthesis was performed with no date restriction, please refer to Appendix 3 for search strategies		

Results

From the systematic search, no relevant systematic reviews or RCTs were identified. In lieu of direct evidence on discontinuation of benzodiazepines and people living with dementia, the project team searched the evidence base for indirect evidence pertaining to older people. No major clinical trials were identified that may impact the strength or direction of the Guideline recommendations.

Three literature reviews that assessed older people were identified. The included studies from these reviews were assessed for outcomes of interest and narratively summarised, refer to Section 5.4.1.

Five studies were identified that assessed clinical outcomes, including sleep quality, anxiety, and quality of life from (17):

- Reeve et al. A systematic review of interventions to deprescribe benzodiazepines and other hypnotics among older people. Eur J Clin Pharmacol 2017

Four of these studies observed no difference in sleep quality and one study reported decline in quality of life in those who continued taking benzodiazepine compared to those who discontinued over eight months.

Another two studies were identified from (18):

- Page et al. The feasibility and effect of deprescribing in older adults on mortality and health: a systematic review and meta-analysis. British journal of clinical pharmacology 2016

Another six studies included in Page et al. were identified as possible data sources for the outcomes of interest. From these six studies, only one study reported on outcomes of our interest, one study reported on changes in sleep (18).

A guideline on the deprescribing of benzodiazepines was published in 2018 by the Canadian Family Practice Association (19). This guideline provides a systematic review on deprescribing and the risks and benefits of benzodiazepines. Ten studies were included in the summary of evidence for this guideline. However, the population focus of this guideline was adults aged 18 or over. No new studies were identified from this review.

Some data on quality of life and factors comparable to changed behaviours such as sleep quality, anxiety and depression were able to be extracted from studies of discontinuation of benzodiazepines in the older people population. Seven studies were selected to provide some narrative evidence to address this clinical question. The seven studies included older people (60 years and older) in the community (three studies) or residents in residential aged care (four studies). Three studies actively excluded people living with dementia, the other studies didn’t specify whether participants had dementia. Studies included long-term users of benzodiazepines, however "long-term" differed between studies. Long-term ranged from participants using benzodiazepines regularly or at least two months to at least one year. Benzodiazepine type and dose varied in each study. No studies used abrupt discontinuation. All studies had different tapering schedules, generally (five studies) used the 25% reduction per week approach, and the other two studies used individually tailored approaches according to dose and benzodiazepine type. Evidence related to withdrawal symptoms or relapse was limited and sometimes not reported.

Narrative Summary of Results

Outcome	Summary
Quality of Life	Four studies (n=303) reported on quality of life in participants. The overall trend observed was that quality of life was either seen to improve in the discontinuation group or no significant difference was reported between groups. In two studies some aspects of quality of life were seen to be significantly improved in those that were in discontinuation groups (20, 21). In one study quality of life was not significantly different in discontinuers, however in the relapse group, quality of life decreased with mainly an increase of problems with activities and pain/discomfort (22). In another study the 18-month follow up showed no significant difference in quality of life between all groups (23).
Anxiety and Depression	Four studies (n=464) reported on the outcomes of anxiety and/or depression in participants. One study showed an increase in anxiety ratings in those that continued benzodiazepines compared to the two withdrawal groups, as well as higher rating of irritability and lack of energy, the geriatric depression scale showed that there was no significant difference between all groups (20). Three studies showed that discontinuation did not have a significant effect on anxiety or depression. Therefore, the trend displayed is that discontinuation of benzodiazepine is unlikely to precipitate worsening outcomes for anxiety or depressive symptoms (23-25).
Sleep	Five studies (n=378) on benzodiazepine discontinuation reported mixed results for sleep and related outcomes, although sleep was measured subjectively. One RCT of 138 community-dwelling long-term benzodiazepine users aged 65 years and older and without dementia found those allocated to the discontinuation groups had little difference in sleep compared with those who continued taking benzodiazepines (20). One non-RCT study of 30 aged care facility residents (including seven residents with dementia) aged 60 years and older found discontinuation (tapering over three weeks) was not associated with worse sleep assessed at eight weeks (26). One RCT of 76 community-dwelling long-term benzodiazepine users (mean age 62 years) from pre/post-treatment comparison reported that participants in the cognitive behaviour therapy group and in the combined cognitive behaviour therapy and medication taper group reduced their total wake time significantly more than those in the medication taper group alone (25). One RCT involving 55 residents without a dementia diagnosis from ten aged care facilities showed benzodiazepine discontinuation was associated with decreased sleep quality during the withdrawal phase, although there was a high number of residents who did not complete the study (21). One controlled study in residential aged care (n=25) reported residents who discontinued benzodiazepines did not have an increase in sleeplessness compared to those who continued (24).

Adverse Events:	Many studies reported on withdrawal symptoms instead of adverse events. Hence, this should be taken into consideration during discontinuation of benzodiazepines use. However, withdrawal symptoms reported in studies were minimal or not significant in comparison to those who continued benzodiazepines use.
Mortality	Harms such as mortality were not directly reported in these included studies. If mortality did occur participants were counted as non-completers in the study, however it was not mentioned if this was related to discontinuation of the benzodiazepines or related to other factors. Therefore, it is not clear whether discontinuation of benzodiazepines influences mortality.

Study Characteristics of Included Studies
Salzman et al. Cognitive improvement following benzodiazepine discontinuation in elderly nursing home residents. International Journal of Geriatric Psychiatry 1992 This study was performed in residential aged care residents on long-term benzodiazepines. Most participants had been taking benzodiazepines for longer than a year. Salzman et al. used a gradual tapering schedule over two weeks, there was no uniform schedule employed. Participants were followed up at 12 months. A range of benzodiazepines were discontinued. No other interventions were used alongside and relapse of depression and anxiety was not reported (24).
Voshaar et al. Tapering off long-term benzodiazepine use with or without group cognitive-behavioural therapy: three-condition, randomised controlled trial. British Journal of Psychiatry 2003 This study was performed in older people (mean age 61-64 years old) in the community. The study was a three-arm RCT that assessed tapering only, tapering and CBT and usual care. Participants were taking benzodiazepines for at least three months. A tapering protocol was used, participants not already on diazepam were transferred to an equivalent dose of diazepam for two weeks by their own doctors. For participants taking more than one benzodiazepine, the dosages were added together. The daily dose of diazepam was reduced by 25% a week during four weekly visits. Participants had the opportunity to divide the last step into two steps of 12.5% for four days. Participants were followed up at three months for outcomes, except for quality of life which was followed up at 18 months. No significant relapse symptoms were reported in either group (23).
Morin et al. Randomized clinical trial of supervised tapering and cognitive behavior therapy to facilitate benzodiazepine discontinuation in older adults with chronic insomnia. Am J Psychiatry 2004

This study was a three-armed RCT performed in older people with chronic insomnia in the community setting. Participants either received tapering, tapering and CBT or CBT only. Participants were included if they had a history of using benzodiazepines for sleep on more than 50% of nights for at least three months. Follow up was at three months and 12 months (25).

A range of benzodiazepines were used by the participants, most were intermediate acting. A tapering schedule was designed according to the following principles; setting goals, stabilising participant of a single benzodiazepine for participants using more than one benzodiazepine, reduction of about 25% of the initial dosage every two weeks until the lowest available dosage of benzodiazepine was reached, introduction of an increasing number of drug-free nights, and scheduled hypnotics use rather than usage on a as needed basis. No significant withdrawal symptoms or adverse events were associated with benzodiazepine tapering (25).

Curran et al. Older adults and withdrawal from benzodiazepine hypnotics in general practice: effects on cognitive function, sleep, mood and quality of life. Psych Med 2003

This study was performed in older people (over 65 years old), investigators actively excluded people living with dementia. Participants were included if they had been repeatedly taking benzodiazepines on a daily basis for at least six months. Participants were followed up at 12, 24 and 52 weeks. A range of benzodiazepines were used. Discontinuers were divided into two groups, one group had their benzodiazepine dose tapered from week one of the trial, while another group were given their usual dose for 12 weeks and then tapered off. Tapering occurred through a dose titration regime that was tailored to each participant's original dose to minimise the risk of withdrawal symptoms (20). There was little evidence of any problems associated with withdrawal (20).

Tsunoda et al. Effects of discontinuing benzodiazepine-derivative hypnotics on postural sway and cognitive functions in the elderly. International Journal of Geriatric Psychiatry 2010

This study assessed residents of residential aged care who had been receiving a continuous treatment with benzodiazepine-derivative hypnotic at a steady dose for at least two months. Participants were followed up at eight weeks. Participants were tapered off the dose of benzodiazepine-derivative hypnotics over three weeks by a weekly 25% reduction and were observed for the following five weeks. There was no concurrent control group in this study (26).

Bourgeois et al. Feasibility of discontinuing chronic benzodiazepine use in nursing home residents: a pilot study. European journal of clinical pharmacology 2014

This was a feasibility study assessed cognitively competent residents with chronic benzodiazepine use for insomnia. Participants were included if they were administered a benzodiazepine/Z drug at bedtime, daily for at least three months. There was no control group. Bourgeois et al. did not have a strict tapering schedule, the general practitioner (GP) was responsible for the discontinuation schedules,

however the investigators did suggest to GP a 25% reduction in dose per week or two weeks. There were no excess withdrawal symptoms observed (22).

Habraken et al. Gradual withdrawal from benzodiazepines in residents of homes for the elderly: experience and suggestions for future research. European Journal of Clinical Pharmacology 1997

This study assessed older people (aged 65 years and older) in residential aged care. Participants with “serious dementia” were excluded. Participants who were using benzodiazepines for at least one year, with a constant daily intake during the month before withdrawal participants were put onto lorazepam before baseline registration. Participants were tapered off lorazepam gradually over five weeks. Participants were followed up at six months and 12 months post withdrawal. A reduction of 25% per week in the first three weeks, followed by a reduction of 12.5% per week in the following two weeks of withdrawal. No major withdrawal symptoms were observed, although there was a decrease in sleep quality during withdrawal (21).

In people living with dementia and changed behaviours, what are the risks and benefits of antidepressant medication use compared to not using antidepressants?

The Australian Clinical Practice Guidelines and Principles of Care for People with Dementia (2016) were selected as the most appropriate guideline to adapt and update (1). The Australian Clinical Practice Guidelines and Principles of Care for People with Dementia (2016) considered evidence from two systematic reviews and two RCTs to inform their recommendations for antidepressants and people living with dementia. The Australian Clinical Practice Guidelines and Principles of Care for People with Dementia found that antidepressants did not have a significant impact on depression in people living with Alzheimer's disease and that two RCTs demonstrated a significant reduction in agitation with the use of selective serotonin reuptake inhibitors (SSRIs) compared to placebo.

PICO

PICO	
Population	People living with dementia with changed behaviors
Intervention	Antidepressants
Comparator	No treatment or placebo or other treatment
Outcomes	Changed behaviours - Critical Mortality - Critical Quality of Life - Critical Serious Adverse Events - Critical Adverse Events - Important Patient/Resident Satisfaction - Important Caregiver Burden - Important Health Resource Use - Important

Inclusion and Exclusion Criteria

Inclusion/exclusion criteria	
Publication type	Inclusion: Available in the English language Exclusion: Reports, commentaries, conference proceedings
Population	Inclusion: People living with dementia Exclusion: People living with dementia receiving palliative care or end of life care
Intervention	Inclusion: Use of antidepressants (specifically, monoamine oxidase inhibitor, phenelzine, tranylcypromine, nontricyclic antidepressant, tricyclic antidepressant, amitriptyline, clomipramine, agomelatine, dosulepin, doxepin, imipramine, nortriptyline, reboxetine, selective serotonin reuptake inhibitors, citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, sertraline, serotonin and noradrenaline reuptake inhibitors, desvenlafaxine, duloxetine, milnacipran, venlafaxine, mianserin, mirtazapine, moclobemide, reboxetine, vortioxetine)

	Exclusion: Studies focused on treatment of conditions other than changed behaviours (delirium or other mental health conditions), studies focused on treating cognitive symptoms with no reference to changed behaviours treatment
Comparator	Inclusion: No antidepressant medication use: • Placebo • No intervention Exclusion: NA
Outcomes	Inclusion: Changed behaviors, quality of life, mortality, adverse events, serious adverse events, patient/resident satisfaction, caregiver burden, health resource use. Studies that report multiple time points for outcomes of interest will be included. Exclusion: NA
Setting	Inclusion: Residential aged care and those receiving high-level care packages (and may still be in the community or transition or other) Exclusion: Acute hospital setting
Study design	Inclusion: Systematic reviews of RCTs and RCTs Exclusion: NA

Search Results

Search results		
Date	**Database**	**Number of search results**
13 April 2021	Ovid MEDLINE	361
13 April 2021	Ovid Embase	950
13 April 2021	PsychINFO	165
22 April 2021	CINAHL	210
16 April 2021	CENTRAL	319
The evidence update was performed from 2014 to April 2021, please refer to Appendix 3 for search strategies		

Results

A total of 2005 citations were identified from systematic search. One additional article was identified outside of our systematic search and was added for consideration. After removal of duplicates, 730 articles were screened for eligibility based on title and abstract. A total of 26 articles were selected for a full text screen. The systematic search identified four relevant index systematic reviews for the evidence update and one new RCT was identified that was not included in the shortlisted index systematic reviews Maier et al (27). No major clinical trials were identified that may impact the strength or direction of the Guideline recommendations.

The index systematic reviews selected for the evidence review include:

- Dudas et al. Antidepressants for treating depression in dementia. Cochrane database of Systematic Reviews 2018Hsu et al. Efficacy of serotonergic antidepressant

treatment for the neuropsychiatric symptoms and agitation in dementia; a systematic review and meta-analysis. Ageing Research Reviews 2021

- Ruthirakuhan et al. Pharmacological interventions for apathy in Alzheimer's disease. Cochrane Database of Systematic Reviews 2018
- Watt et al. Safety of pharmacologic interventions for neuropsychiatric symptoms in dementia: a systematic review and network meta-analysis. BMC Geriatr 2020 Section 6.4.2 contains details on outcomes extracted from the index systematic reviews.

Results on apathy scores from Maier et al. (27) were unable to be added to the existing pooled analysis by Ruthirakuhan et al. (28) due to incompleteness of the data sets and the use of different measurement scales. Maier et al. used a different scale (Apathy Evaluation Scale-Clinician Version, AES-C) (27). The individual studies in the pooled analysis (29, 30) both used the NPI-apathy subscale, however data from one study (29) was incomplete which prevented the addition of the extra studies that used different measurement scale in the pooled analysis.

Primary Study

Outcome	Study Details
Apathy	**Primary study** Maier et al. Bupropion for the Treatment of Apathy in Alzheimer Disease: A Randomized Clinical Trial. JAMA 2020 **Summary** The trial was a 12-week, double-blind, placebo-controlled RCT that compared bupropion (n=54) to placebo (n=54) for the treatment of apathy in participants living with probable Alzheimer's disease without depression. Bupropion was commenced at 150mg once daily, and if tolerated, the dose was increased to 150mg twice daily after four weeks (27). The primary outcome measure was change in the AES-C score. The study reported that multiple stakeholders agreed to an interim analysis based on half of the planned participants due to a low recruitment rate. Results from this interim analysis demonstrated no significant difference in bupropion compared with placebo on the mean change of the AES-C total score between baseline and 12 weeks. Thus, due to the lack of efficacy of bupropion, these stakeholders decided to prematurely terminate the study (27).

Risk of Bias

	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Overall
Maier	Low	Low	Low	High	Some concerns	Some concerns
The Cochrane Risk of Bias 2 tool was used.						

Outcomes	Results
Changed Behaviours	**Index Systematic Review** Dudas et al. Antidepressants for treating depression in dementia. Cochrane database of Systematic Reviews 2018 **Summary** **Changed behaviours - Depression** Evidence was gathered from eight studies, 614 participants with follow up between six to 13 weeks. The review included people living with dementia, Alzheimer's disease or probable Alzheimer's disease with any type of depression as defined by a recognised criteria. The setting was outpatient or specialised dementia centre/service. The range of antidepressants and doses included sertraline (25–150mg/day), escitalopram (5-15mg/day), mirtazapine (15-45mg/day), venlafaxine (37.5-131.25mg/day), clomipramine (25 mg-100mg/day), fluoxetine (10-40mg/day), imipramine (mean dose 83mg/day) (31). Evidence from a pooled analysis of eight studies showed that antidepressant use results in little to no difference in depressive symptoms? in people living with dementia and depression compared to placebo. Evidence from a pooled analysis of five studies demonstrated that SSRI use results in little to no difference in depressive symptoms? in people living with dementia and depression compared to placebo. A subgroup analysis of mirtazapine (one study) and venlafaxine (one study) results in little to no difference at reducing depressive symptoms in people living with dementia and depression compared to placebo. Evidence from a pooled analysis of two studies showed that antidepressant use probably results in little to no difference in depressive symptoms in people living with dementia and depression after six to nine months of treatment (31). **Index Systematic Review** Hsu et al. Efficacy of serotonergic antidepressant treatment for the neuropsychiatric symptoms and agitation in dementia; a systematic review and meta-analysis. Ageing Research Reviews 2021 **Summary** **Changed behaviours – Overall**

	Evidence was gathered from 12 studies, 1276 participants with follow up between 17 days to 12 months. The review included people living with dementia or Alzheimer's disease. Setting was outpatient or inpatient. Only serotonergic antidepressants were included: citalopram (10-30mg oral daily), escitalopram (5-20mg oral daily), mirtazapine (15-45mg/day), trazodone (50-300mg/day), sertraline (50-200mg/day), fluoxetine (20mg/day), fluvoxamine (50-150mg/day) and minaprine (200mg/day). Flexible dosing was used in almost all studies. Evidence from a pooled analysis of 12 studies showed that antidepressant use may reduce changed behaviours in people living with dementia compared to placebo. Subgroup analysis of nine studies showed that SSRI use has the same effect at reducing changed behaviours in people living with dementia compared to antidepressants in general (32). **Changed behaviours – Agitation** Evidence was gathered from nine studies, 749 participants with follow up between 17 days to 12 months. The review included people living with dementia or Alzheimer's disease. Setting was a mixture of outpatient, inpatient and residential aged care. Only serotonergic antidepressants were included: citalopram (10-30mg/day), trazodone (50-300m/day), sertraline (50-200m/day), fluoxetine (20m/day). Flexible dosing was used in almost all studies. A pooled analysis of nine studies showed that antidepressant use reduces agitation slightly in people living with dementia and changed behaviours compared to placebo. Subgroup analysis of six studies indicated that SSRI use has a similar effect in reducing agitation in people living with dementia compared to antidepressants in general (32). **Index Systematic Review** Ruthirakuhan et al. Pharmacological interventions for apathy in Alzheimer's disease. Cochrane Database of Systematic Reviews 2018 **Summary** **Changed behaviours – Apathy** Evidence from two studies showed little to no difference in apathy. We identified one RCT which found bupropion results in little to no difference in the treatment of apathy in people living with Alzheimer's disease. However, these results could not be included in the meta-analysis due to heterogeneity and incomplete outcome data of the studies (28).

Adverse Events	**Index Systematic Review** Dudas et al. Antidepressants for treating depression in dementia. Cochrane database of Systematic Reviews 2018 **Summary** Evidence was gathered from three studies, 1073 participants with follow up between six to 13 weeks. The review included people living with dementia, Alzheimer's disease or probable Alzheimer's disease with any type of depression as defined by a recognised criteria. Setting was inpatient and outpatient. The range of antidepressants and doses included were sertraline (50–150mg/day), mirtazapine (15-45mg/day), moclobemide (400mg/day), clomipramine (25-100mg/day). Overall and in absolute terms, evidence from three studies showed that antidepressant use in people living with dementia and depression likely results in 107 more people experiencing at least one adverse effect per 1000 people. Evidence from one study showed that SSRI use in people living with dementia and depression results in 164 more people experiencing at least one event of adverse event per 1000 people. There was heterogeneity in reporting of adverse event data among the three studies included in the meta-analysis. Petracca et al. used a structured questionnaire (33), Roth et al. relied upon spontaneous reporting (34) and Banerjee et al. did not report their method of data collection (35). Further differences were observed in how the adverse event data was collected and presented, some studies reported data narratively or as percentages, some categorised by body system and others reported specific symptoms. Petracca et al. described the adverse events narratively or as percentages, with the most commonly reported types of adverse events of dry mouth, dizziness, sleep problems, constipation, headache, stomach ache, nausea and tremor (33). Roth et al. presented their adverse event data as percentages where the most common adverse events reported in both the moclobemide and placebo groups were nervousness/restlessness, dry mouth, tiredness, headache, agitation, anxiety and sleep disturbance (34). Banerjee et al. reported the number of adverse events but categorised them according to body system (such as the gastrointestinal and cardiovascular system) (35). It should be noted that while some studies were conducted in residential aged care setting, the vast majority of included studies were in the community or outpatient setting (31).

Mortality and Stroke	**Index Systematic Review** Watt et al. Safety of pharmacologic interventions for neuropsychiatric symptoms in dementia: a systematic review and network meta-analysis. BMC Geriatr 2020 **Summary** Evidence on mortality was gathered from six studies, 719 participants with follow up between <13 – 30 weeks. The review included people living with dementia or Alzheimer's disease. Setting was outpatient, residential aged care and hospital (one study). The range of antidepressants and doses included were sertraline (25–150mg/day), escitalopram/citalopram (5mg/day), mirtazapine (24mg/day) and fluvoxamine (dose/day not stated). Evidence on stroke was gathered from one study, 74 participants with follow up was 52 weeks. The review included people living with Alzheimer's disease. Setting was specialty clinic. The intervention was citalopram (5mg/day). There are limited data on antidepressants and the outcomes of mortality and stroke in dementia. Interpretation of RCT evidence is challenging due to studies having low number of events and wide CIs. Limited evidence suggests it is uncertain whether antidepressant use is associated with increased or decreased risk of stroke or mortality (36).
Quality of Life	**Index Systematic Review** Dudas et al. Antidepressants for treating depression in dementia. Cochrane database of Systematic Reviews 2018 **Summary** Evidence was gathered from two studies, 457participants with follow up between six to nine months. The review included people living with dementia, Alzheimer's disease or probable Alzheimer's disease with any type of depression as defined by a recognised criteria. The setting was outpatient or residential aged care (31).. The range of antidepressants and doses included were sertraline (25–150mg/day), escitalopram (5mg/day), mirtazapine (24mg/day), venlafaxine (37.5-131.25mg/day), maprotiline (25-75mg/day), moclobemide (400mg/day), clomipramine (25-100mg/day), fluoxetine (10-40mg/day), imipramine (mean dose 83mg/day) (31).

	Two studies included in a Cochrane review by Dudas et al. reported the association between sertraline and mirtazapine use and quality of life. Neither study reported a significant difference between antidepressants and placebo (31).
Caregiver Burden	**Index Systematic Review** Hsu et al. Efficacy of serotonergic antidepressant treatment for the neuropsychiatric symptoms and agitation in dementia; a systematic review and meta-analysis. Ageing Research Reviews 2021 **Summary** Evidence was gathered from seven studies, 961 participants with follow up between six weeks to 12 months. The review included people living with dementia or Alzheimer's disease. The setting was outpatient or a mixture of outpatient and inpatient. Only serotonergic antidepressants were included: citalopram (10-30mg/day), mirtazapine (15-45mg/day), sertraline (50-200mg/day), trazodone (50mg/day), fluoxetine (20mg/day). Flexible dosing was used in almost all studies (32). Evidence from seven studies showed that antidepressant use reduces caregiver burden slightly for those caring for people living with dementia compared to placebo. Subgroup analysis of five studies shows similar results where SSRI use may also slightly improve caregiver burden for those caring for people living with dementia (32).
Patient/Resident Satisfaction	We were unable to identify a systematic review that assessed this outcome for antidepressants use compared to placebo.
Health Resource Use	We were unable to identify a systematic review that assessed this outcome for antidepressants use compared to placebo.

Evidence Table

PICO
Population: People living with dementia
Intervention: Antidepressants

Comparator: Placebo

Outcome Timeframe	**Study results and measurements**	**Absolute effect estimates**		**Certainty of the Evidence** (Quality of evidence)	**Plain language summary**
		Placebo	Antidepressants		
Adverse Events - Overall[1]	Odds ratio: 1.55 (CI 95% 1.21 - 1.98) Based on data from 1073 participants in 3 studies[2] Follow up 6-13 weeks	**384** per 1000	**491** per 1000	**Moderate** Due to serious publication bias[3]	Antidepressants probably increases adverse events - overall.
		Difference: **107 more per 1000** (CI 95% 46 more - 168 more)			
Mortality	Odds ratio: 0.83 (CI 95% 0.33 - 2.25) Based on data from 719 participants in 6 studies Follow up <13 – 30 weeks	**45** per 1000	**38** per 1000	**Low** Due to serious risk of bias, Due to serious imprecision[4]	We are uncertain whether antidepressants improves or worsen mortality.
		Difference: **7 fewer per 1000** (CI 95% 30 fewer - 51 more)			
Serious Adverse Events – Stroke	Odds ratio: 0.19 (CI 95% 0.01 - 5.85) Based on data from 74 participants in 1 studies Follow up 52 weeks	**0** per 1000	**0** per 1000	**Very low** Due to serious risk of bias, Due to very serious imprecision[5]	We are uncertain whether antidepressants improves or worsens serious adverse events – stroke
		Difference: **0 fewer per 1000** (CI 95% 0 fewer - 0 fewer)			
Changed Behaviours - Depression[6]	Measured by: Pooled analysis of multiple scales Scale: - Lower better Based on data from 614 participants in 8 studies[7] Follow up 6-13 weeks			**High** [8]	Antidepressant use results in little to no difference in people living with dementia and depression.
		Difference: **SMD 0.10 lower** (CI 95% 0.26 lower - 0.06 higher)			
Changed Behaviours - Agitation[9]	Measured by: Pooled analysis of multiple scales Scale: - Lower better Based on data from 749 participants in 9 studies[10]			**High** [11]	Antidepressant use reduces agitation slightly in people living with dementia and changed behaviours compared to placebo
		Difference: **SMD 0.28 lower** (CI 95% 0.14 lower - 0.43 lower)			

	Follow up 17 days to 12 months			
Changed Behaviours - Apathy	Measured by: NPI-apathy subscale Scale: - Lower better Based on data from 126 participants in 2 studies	Difference: **MD 1.24 lower** (CI 95% 1.44 lower - 1.04 lower)	**Very low** Due to serious risk of bias, Due to serious indirectness, Due to serious imprecision[12]	We are uncertain whether antidepressants improves or worsens changed behaviours - apathy
Caregiver Burden[13]	Measured by: Pooled analysis of multiple scales Scale: - Lower better Based on data from 961 participants in 7 studies[14] Follow up 6 weeks to 12 months	Difference: **SMD 0.24 lower** (CI 95% 0.07 lower - 0.41 lower)	**High** 15	Antidepressant use reduces caregiver burden slightly for those caring for people living with dementia and changed behaviours compared to placebo
Changed Behaviours - Overall[16]	Measured by: Pooled analysis of multiple scales Scale: - Lower better Based on data from 1276 participants in 12 studies[17] Follow up 17 days to 12 months	Difference: **SMD 0.49 lower** (CI 95% 0.24 lower - 0.74 lower)	**Low** Due to serious inconsistency and serious publication bias[18]	Antidepressant use may improve changed behaviours - overall in people living with dementia.
Quality of Life[19]	Based on data from 457 participants in 2 studies Follow up 6-9 months		**Moderate** Due to serious risk of bias[20]	Two studies reported on quality of life but reported data in very different formats. Neither study reported any significant difference by treatment group. Antidepressants probably has little or no difference on quality of life.

Resident Satisfaction			No studies reported this outcome	No studies were found that looked at resident satisfaction

1. Measured as the number experiencing at least one adverse event
2. Systematic review [9] with included studies: Banerjee 2011, Petracca 1996, Banerjee 2011, Roth 1996 **Baseline/comparator** Control arm of reference used for intervention .
3. **Publication bias: serious.** due to selective reporting.
4. **Risk of Bias: serious.** Incomplete data; **Imprecision: serious.** Wide confidence intervals, Low number of events.
5. **Risk of Bias: serious.** Incomplete data; **Imprecision: very serious.** Wide confidence intervals, Low number of participants, Only data from one study.
6. Depression endpoint mean scores. Pooled analysis of the following measurement/scales: Cornell Scale for Depression in Dementia scale, Hamilton Depression Rating scale, Montgomery-Asberg Depression Rating scale.
7. Systematic review [9] with included studies: Banerjee 2011, Lyketsos 2003, Banerjee 2011, de Vasconcelos 2007, Reifler 1989, Rosenberg 2010, Petracca 2001, Petracca 1996, An 2017 **Baseline/comparator** Control arm of reference used for intervention.
8. **Inconsistency: no serious.** Despite the use of various antidepressants medications, in the pooled analysis there was low heterogeneity observed. I^2=7%; **Imprecision: no serious.** CI is not not too wide, sample size is fairly large, includes multiple study. While the CI cross the null effect, there are no serious concerns.
9. Pooled analysis of the following measurement/scales: Neuropsychiatric Inventory agitation sub score, Cohen-Mansfield Agitation Inventory, Neurobehavioral Rating Scale agitation sub score, Agitation Behaviours in Dementia Scale.
10. Systematic review [18] . **Baseline/comparator** Control arm of reference used for intervention.
11. **Risk of Bias: no serious.** Inadequate concealment of allocation during randomization process, resulting in potential for selection bias; **Inconsistency: no serious.** The magnitude of statistical heterogeneity was low, with I^2: 0%.; **Indirectness: no serious.** The majority of studies were conducted in the outpatient setting; **Imprecision: no serious.** Small effect size and fairly tight CI.
12. **Risk of Bias: serious.** Selective outcome reporting; **Indirectness: serious.** Clinically significant apathy was not an inclusion criterion for both studies. Participants in the CITAD trial had clinically significant apathy at baseline (NPI sub score >3); **Imprecision: serious.** Low number of participants.
13. Pooled analysis of the following measurement/scales: Neuropsychiatric Inventory caregiver distress sub scale, Zarit burden scale, Caregiver Burden Questionnaire, Agitated Behaviours in Dementia Scale reaction score, the Screen for Caregiver Burden, University of Iowa Caregiver Stress Inventory.
14. Systematic review [18] . **Baseline/comparator** Control arm of reference used for intervention.
15. **Risk of Bias: no serious.** Inadequate concealment of allocation during randomization process, resulting in potential for selection bias; **Inconsistency: no serious.** I^2=32.76%; **Indirectness: no serious.** The majority of studies were conducted in the outpatient setting; **Imprecision: no serious.** Effect size is a small appreciable benefit.
16. Pooled analysis of the following measurement/scales: Neuropsychiatric Inventory, Neurobehavioral Rating Scale, Behavioural Rating Scale for Dementia, Behavioural Pathology in Alzheimer's Disease Rating Scale, Gottfries-Brane-Steen Geriatric Rating Scale - behavioural symptoms, Stuard Hospital Geriatric Rating Scale
17. Systematic review [18] . **Baseline/comparator** Control arm of reference used for intervention.
18. **Risk of Bias: no serious.** Inadequate concealment of allocation during randomization process, resulting in potential for selection bias; **Inconsistency: serious.** The confidence interval of some of the studies do not overlap with those of most included studies/ the point estimate of some of the included studies. The magnitude of statistical heterogeneity was high, with I^2: 74.44 %.; **Indirectness: no serious.** The majority of studies were conducted in the outpatient setting; **Imprecision: no serious.** Moderate effect size, tight CI; **Publication bias: serious.** Publication bias was detected by the authors.
19. Non-pooled analysis of the following measurement/scales: the Alzheimer's Disease-Related Quality of Life Scale, Dementia-Related Quality of Life, Euro Quality of Life 5 Dimension Scale
20. **Risk of Bias: serious.** Large loss to follow up, Inadequate/lack of blinding of outcome assessors, resulting in potential for detection bias; **Imprecision: no serious.** While both studies report quality of life differently, they both report that antidepressants have little to no effect in improving quality of life in their participants after six to nine months of treatment. One study had an n=326 and one study had n=131;

For people living with dementia who have commenced an antidepressant, should the medication be discontinued?

Currently there is a lack of clinical practice guidelines that address the discontinuation of antidepressants in people living with dementia.

PICO

PICO	
Population	People living with dementia
Intervention	Discontinuation of antidepressants
Comparator	Continuation of antidepressants
Outcomes	Changed Behaviours - Critical Mortality - Critical Quality of Life - Critical Serious Adverse Events - Critical Adverse Events - Important Patient/Resident Satisfaction - Important Caregiver Burden - Important Health Resource Use - Important

Inclusion and Exclusion Criteria

Inclusion/exclusion criteria	
Publication type	Inclusion: Available in the English language Exclusion: Reports, commentaries, conference proceedings
Population	Inclusion: People living with dementia Exclusion: People living with dementia receiving palliative care or end of life care
Intervention	Inclusion: Changes made to antidepressants, specifically: • discontinuation • deprescribing • elimination • reducing • tapering • withdrawal • cessation • monitoring Exclusion: Studies focused on treatment of conditions other than changed behaviours (delirium or other mental health conditions), studies focused on treating cognitive symptoms with no reference to changed behaviours treatment
Comparator	Inclusion: Antidepressants are: • Continued • Usual care • No intervention or changes made Exclusion: NA

Outcomes	Inclusion: Changed behaviours, quality of life, mortality, adverse events, serious adverse events, patient/resident satisfaction, caregiver burden, health resource use. Studies that report multiple time points for outcomes of interest will be included. Exclusion: NA
Setting	Inclusion: Residential aged care and those receiving high-level care packages (and may still be in the community or transition or other) Exclusion: Acute hospital setting
Study design	Inclusion: Systematic reviews of RCTs and RCTs Exclusion: NA

Search Results

Search results		
Date	**Database**	**Number of search results**
13 April 2021	Ovid MEDLINE	256
13 April 2021	Ovid Embase	932
13 April 2021	PsychINFO	80
22 April 2021	CINAHL	6
16 April 2021	CENTRAL	166
The evidence synthesis was performed with no date restriction, please refer to Appendix 3 for search strategies		

Results

A total of 1440 citations were identified from systematic search. After removal of duplicates, 1197 articles were screened for eligibility based on title and abstract. A total of 101 articles were selected for a full text screen. Systematic review related to this clinical topic was not identified, however one small RCT was identified. No major clinical trials were identified that may impact the strength or direction of the Guideline recommendations.

A pragmatic search on PubMed was performed to identify any large observational studies or systematic review of observational studies, however no further citations were found relating to people living with dementia. The following search terms were used in the pragmatic search “antidepressant” AND “discontinue” AND “dementia”.

Bergh et al. 2012 was selected to inform the clinical topic (37). The risk of bias was evaluated with the Cochrane Risk of Bias 2 tool by two reviewers independently and then compared. The overall risk of bias for the study was deemed to be high, due to deviations from the intended intervention and missing outcome data. Further details on Bergh et al 2012 can be found below.

Direct evidence relating to discontinuation of antidepressants and critical outcomes; mortality and serious adverse events, was not identified.

Primary study

Outcome	**Study Details**

Agitation	**Primary study** Bergh et al. Discontinuation of antidepressants in people with dementia and neuropsychiatric symptoms (DESEP study): double blind, randomised, parallel group, placebo-controlled trial. BMJ 2012 **Summary** This trial was a 25-week, double-blind, placebo controlled RCT that compared discontinuation of SSRI (n=63) to continuation of SSRI (n=65) in participants living with dementia without depression in residential aged care. Participants in the discontinuation group had their SSRI tapered and ceased over one week and replaced by placebo. The primary outcome measures were the NPI and Cornell Score for Depression in Dementia (CSDD) scores after 25 weeks. Both the NPI and CSDD scores worsened slightly in the discontinuation group after 25 weeks. Interestingly, there was little to no difference between the two groups in terms of quality of life after 25 weeks (37).

Risk of Bias

	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Overall
Bergh et al	Low	High	High	Low	Some concerns	High
The Cochrane Risk of Bias 2 tool was used.						

MONASH University

Evidence Table

PICO
Population: People living with dementia
Intervention: Discontinuation of antidepressants
Comparator: Continuation of antidepressants

Outcome Timeframe	**Study results and measurements**	**Absolute effect estimates**		**Certainty of the Evidence** (Quality of evidence)	**Plain language summary**
		Continuation of antidepressants	Discontinuation of antidepressants		
Changed Behaviours - Depressive Symptoms[1]	Measured by: Cornell Scale for Depression in Dementia Scale: 0 - 38 Lower better Based on data from 77 participants in 1 studies Follow up 25 weeks	**4.42** Mean	**6.03** Mean	**Very low** Due to serious risk of bias, Due to very serious imprecision[2]	We are uncertain whether discontinuation of antidepressants improves or worsen depressive symptoms in people living with dementia
		Difference: **MD 1.61 higher** (CI 95% 0.39 lower - 3.61 higher)			
Changed Behaviours - Overall	Measured by: Neuropsychiatric Inventory (NPI) 10-item scale, Total Score Scale: 0 - 120 Lower better Based on data from 81 participants in 1 studies Follow up 25 weeks	**14.74** Mean	**22.54** Mean	**Very low** Due to serious risk of bias, Due to very serious imprecision[3]	We are uncertain whether discontinuation of antidepressants improves or worsen changed behaviours in people living with dementia
		Difference: **MD 7.80 higher** (CI 95% 1.10 higher - 14.50 higher)			
Quality of Life	Measured by: Quality of Life – Alzhemier's Disease Scale, patients rating Scale: 13 - 52 High better	**35.87** Mean	**32.8** Mean	**Very low** Due to serious risk of bias, Due to very serious imprecision[4]	We are uncertain whether discontinuation of antidepressants improves or worsen quality of life in
		Difference: **MD 3.07 lower** (CI 95% 6.64 lower - 0.50 higher)			

	Based on data from 51 participants in 1 studies Follow up 25 weeks			people living with dementia
Mortality			No studies reported this outcome	No studies reported this outcome
Serious Adverse Events			No studies reported this outcome	No studies were found that looked at serious adverse events
Adverse Events			No studies reported this outcome	No studies were found that looked at adverse events
Resident Satisfaction			No studies reported this outcome	No studies were found that looked at resident satisfaction
Caregiver Burden			No studies reported this outcome	No studies were found that looked at caregiver burden
Health Resource Use			No studies reported this outcome	No studies were found that looked at health resource use

1. Cornell Scale, total score
2. **Risk of Bias: serious.** Due to some concerns in effect of assignment to intervention, due to authors not specifying an intention to treat analysis, however we don't foresee that this would substantially impact on the result. Potential high risk of bias in measurement of outcome– due to authors outline that there may have been bias in the difference in the ascertainment of the outcome between groups, because data on questionnaires were subjective and data collection may not have been reliable because many research nurses were involved; **Inconsistency: no serious.** Based on the results from one study; **Imprecision: very serious.** Only data from one study, Low number of participants, Wide confidence intervals; **Publication bias: no serious.** Regarding antidepressant outcomes, the outcomes reported in the clinical trial registry for Bergh et al. matched the outcomes reported in the published study.
3. **Risk of Bias: serious.** Due to some concerns in effect of assignment to intervention, due to authors not specifying an intention to treat analysis, however we don't foresee that this would substantially impact on the result. Potential high risk of bias in measurement of outcome– due to authors outline that there may have been bias in the difference in the ascertainment of the outcome between groups, because data on questionnaires were subjective and data collection may not have been reliable because many research nurses were involved.; **Inconsistency: no serious.** Based on the results from one study; **Imprecision: very serious.** Wide confidence intervals, Low number of participants, Only data from one study; **Publication bias: no serious.** Regarding antidepressant outcomes, the outcomes reported in the clinical trial registry for Bergh et al. matched the outcomes reported in the published study.

4. **Risk of Bias: serious.** Due to some concerns in effect of assignment to intervention, due to authors not specifying an intention to treat analysis, however we don't foresee that this would substantially impact on the result. Potential high risk of bias in measurement of outcome– due to authors outline that there may have been bias in the difference in the ascertainment of the outcome between groups, because data on questionnaires were subjective and data collection may not have been reliable because many research nurses were involved.; **Inconsistency: no serious.** Based on the results from one study; **Imprecision: very serious.** Wide confidence intervals, Low number of participants, Only data from one study; **Publication bias: no serious.** Regarding antidepressant outcomes, the outcomes reported in the clinical trial registry for Bergh et al. matched the outcomes reported in the published study.

In people living with dementia and changed behaviours, what are the risks and benefits of pro re nata (PRN) antipsychotic use compared to regular antipsychotic use?

Currently there are no clinical practice guidelines that specifically assess the pro re nata (PRN) use of antipsychotics in people living with dementia.

PICO

PICO	
Population	People living with dementia
Intervention	PRN use of antipsychotics
Comparator	Regular use of antipsychotics
Outcomes	Changed Behaviours - Critical Mortality - Critical Quality of Life - Critical Serious Adverse Events - Critical Adverse Events - Important Patient/Resident Satisfaction - Important Total use of Antipsychotics – Important Caregiver Burden - Important Health Resource Use - Of least important

Inclusion and Exclusion Criteria

Inclusion/exclusion criteria	
Publication type	Inclusion: Available in the English language Exclusion: Reports, commentaries, conference proceedings
Population	Inclusion: People living with dementia who are taking antipsychotics Exclusion: People living with dementia receiving palliative care or end of life care
Intervention	Inclusion: PRN use of antipsychotics (specifically, amisulpride, aripiprazole, asenapine, brexpiprazole, chlorpromazine, clozapine, droperidol, flupentixol, haloperidol, lurasidone, olanzapine, paliperidone, periciazine, quetiapine, risperidone, ziprasidone, clopenthixol) Exclusion: Studies focused on treatment of conditions other than changed behaviours (delirium or other mental health conditions), studies focused on treating cognitive symptoms with no reference to changed behaviours treatment
Comparator	Inclusion: Regular use of antipsychotics Exclusion: NA

Outcomes	Inclusion: Changed behaviours, quality of life, mortality, adverse events, serious adverse events, patient/resident satisfaction, caregiver burden, health resource use Exclusion: NA
Setting	Inclusion: Residential aged care and those who are receiving high-level care packages (and may still be in the community or transition or other) Exclusion: Acute hospital setting
Study design	Inclusion: Systematic reviews of RCTs and RCTs. Exclusion: NA

Search Results

Search results		
Date	**Database**	**Number of search results**
13 April 2021	Ovid MEDLINE	207
13 April 2021	Ovid Embase	531
13 April 2021	PsychINFO	60
22 April 2021	CINAHL	2
12 April 2021	CENTRAL	74
The evidence synthesis was performed with no date restriction, please refer to Appendix 3 for search strategies		

Results

A total of 874 citations were identified from our systematic search. An additional systematic review article was identified outside of the systematic search and included in the screen (38). After removal of duplicates, 730 articles were screened for eligibility based on title and abstract. Three articles were selected for full text screen and assessed for comprehensiveness and relevance, however none of the identified articles matched the PICO. A short summary of the three reviews is provided below. No major clinical trials were identified that may impact the strength or direction of the Guideline recommendations.

A systematic review by Hermann et al. (2007) assessed the pharmacologic management of neuropsychiatric symptoms of Alzheimer Disease *(39).* The review assessed studies on the general effectiveness of antipsychotics and benzodiazepines and reported results narratively. None of included studies directly assessed the PRN use of antipsychotics were identified and this review was excluded.

A scoping review by Randle et al. (2019) investigated the association between regular and intermittent antipsychotic use and mortality risk in older people (40). The scoping review included RCTs and observational studies from 2002 and had a broad inclusion criteria including people over the age of 65 years using antipsychotics for mental health issues. Randle et al. stated that in their search they did not identify any studies that directly assessed the impact of PRN use on mortality risk.

A review by Vaismoradi et al. (2019) investigated patterns of prescribing PRN psychotropic medications in residential aged care. The narrative review included RCTs and observational studies from 2009. The author identified three observational studies that assessed prescribing patterns. None of the included studies assessed the clinical outcomes of interest (38).

Due to the lack of evidence that addressed the PICO of both, PRN use of benzodiazepine and PRN use of antipsychotic both clinical topics on PRN use were combined.

The technical team conducted an additional pragmatic search on PubMed for the combined topics to identify indirect evidence. The following search terms were used in the pragmatic search “antipsychotic” OR “benzodiazepine” AND “PRN”.

Limited indirect evidence on PRN versus regular medication use from other populations was identified. A Cochrane review identified no RCT evidence in mental health care and concluded that current practice is based on clinical experience only (41). Other indirect evidence on PRN use of antipsychotics and benzodiazepines in people with a psychiatric disorder is also limited, particularly when it comes to the reporting of clinical outcomes and effectiveness (42).

Due to the lack of evidence it was considered acceptable to combine these two clinical topics into one section in the guideline and develop recommendations accordingly. The results on the outcomes for both PRN use of antipsychotics and PRN use of benzodiazepines are outlined below.

Changed Behaviours and Quality of Life
Evidence relating to the PRN use of benzodiazepines and antipsychotics, and critical outcomes on benefits (changed behaviours and quality of life) was not identified from the systematic search.

Mortality and Serious Adverse Events
Evidence relating to the PRN use of benzodiazepines and antipsychotics, and critical outcomes on harms (serious adverse events and mortality) was not identified from the systematic search.

However, potential harms of PRN versus regular use suggested by anecdotal evidence include adverse drug events, provision of symptomatic management without a thorough investigation of causes or unmet needs, contribution to polypharmacy, regimen complexity and drug interactions, and exceeding the maximum recommended daily dose in residents prescribed the same medication on both a PRN and regular basis (43).

When assessing indirect evidence, a scoping review of RCTs and observational studies found an absence of evidence on PRN antipsychotic use and mortality in older people (aged 65 years and older) (40). The effects of short-term use of antipsychotics may be similar to PRN antipsychotic use. Indirect evidence from observational studies in older people suggests that risk of stroke (44) and mortality (45) with antipsychotics is highest at the start of treatment (within the 30 days).

When considering evidence in this guideline relating to the harms of use:

- *Indirect evidence* from older people suggests that benzodiazepines are associated with a moderate increased risk of hip fracture.
- *Direct evidence* from RCTs in people living with dementia suggests that antipsychotics are associated with a moderate increase in mortality and cardiovascular events as well as an increase in stroke.

Adverse events - Falls
Indirect evidence from an observational study in residential aged care facilities found occasional PRN antipsychotic and benzodiazepine use is associated with a higher risk of

falling in Residential Aged Care Facilities (RACFs), and PRN benzodiazepine use was associated with a higher risk of falling than regular benzodiazepine use (46). This may be because regular benzodiazepine use results in tolerance or because clinicians avoid regular benzodiazepines in those at highest risk of falling. The PRN use of short-acting benzodiazepine was associated with lower night time sleep quality and longer day-time napping than regular use of long-acting benzodiazepine in a cross-sectional South Australian study in six residential aged care facilities (47). It is unclear if this was because the PRN use of short-acting benzodiazepines was channelled to residents susceptible to day-time napping.

In people living with dementia and changed behaviours, what are the risks and benefits of pro re nata (PRN) benzodiazepine use compared to regular benzodiazepine use?

Currently there are no clinical practice guidelines that specifically assess the PRN use of benzodiazepines in people living with dementia.

PICO

PICO	
Population	People living with dementia
Intervention	PRN use of benzodiazepines
Comparator	Regular use of benzodiazepines
Outcomes	Changed Behaviours - Critical Mortality - Critical Quality of Life - Critical Serious Adverse Events - Critical Adverse Events - Important Patient/Resident Satisfaction - Important Caregiver Burden - Important Total Use of Benzodiazepines - Important Health Resource Use - Of least important

Inclusion and Exclusion Criteria

Inclusion/exclusion criteria	
Publication type	Inclusion: Available in the English language Exclusion: Reports, commentaries, conference proceedings
Population	Inclusion: People living with dementia who are taking benzodiazepines Exclusion: People living with dementia receiving palliative care or end of life care
Intervention	Inclusion: PRN use of benzodiazepines Exclusion: Studies focused on treatment of conditions other than changed behaviours (delirium or other mental health conditions), studies focused on treating cognitive symptoms with no reference to changed behaviours treatment
Comparator	Inclusion: Regular (charted) use of benzodiazepines Exclusion: NA
Outcomes	Inclusion: Changed behaviours, quality of life, mortality, adverse events, serious adverse events, patient/resident satisfaction, caregiver burden, health resource use. Studies that report multiple time points for outcomes of interest will be included. Exclusion: NA
Setting	Inclusion: Residential aged care and who are receiving high-level care packages (and may still be in the community or transition or other)

	Exclusion: Acute hospital setting
Study design	Inclusion: Systematic reviews of RCTs and RCTs Exclusion: NA

Search Results

Search results		
Date	**Database**	**Number of search results**
13 April 2021	Ovid MEDLINE	44
13 April 2021	Ovid Embase	56
13 April 2021	PsychINFO	7
22 April 2021	CINAHL	1
16 April 2021	CENTRAL	368
The evidence synthesis was performed with no date restriction, please refer to Appendix 3 for search strategies		

Results

A total of 476 citations were identified from our systematic search. After removal of duplicates, 476 articles were screened for eligibility based on title and abstract. No relevant citations were identified in the screen. A pragmatic search on PubMed was performed to identify potential systematic review of observational studies, however no further citations were identified.

Due to the lack of evidence that addressed the PICO of both, PRN use of benzodiazepines and PRN use of antipsychotics both clinical topics were combined. The technical team conducted an additional pragmatic search on PubMed for the combined topics to identify indirect evidence. The following search terms were used in the pragmatic search “antipsychotic” OR “benzodiazepine” AND “PRN”. Limited evidence was identified from this pragmatic search. The findings from this broad search are outlined in Section 0. Due to the lack of evidence it was considered acceptable to combine these two clinical topics into one section in the guideline and develop recommendations accordingly.

What is the effectiveness of interventions to improve the use and appropriateness of antipsychotics, benzodiazepines and antidepressants among people living with dementia or in residential aged care?

A variety of different interventions that target healthcare professional and influence the use of psychotropic medications exist including education programs, in/outreach services, medication reviews, case conferencing, and passive dissemination of guidelines. However, it is unclear which intervention is the most effective to improve use and appropriateness of psychotropic medications, particularly in the residential aged care setting where a number of factors contribute to the success and sustainability of an intervention. Currently there are no clinical practice guidelines focusing on the interventions to improve use and appropriateness of psychotropic medications among people living with dementia or in residential aged care.

PICO

PICO	
Population	All residential aged care residents with or without dementia and people living with dementia
Intervention	Interventions to improve use and appropriateness of antipsychotics, benzodiazepines and antidepressants
Comparator	No intervention or usual care
Outcomes	Changed behaviours - Important Use of Psychotropic Medications (antipsychotics, benzodiazepines and antidepressants) - Critical Prevalence of Antipsychotics, Benzodiazepines and Antidepressants - Critical Quality of Life - Critical Mortality - Critical Adverse Events - Important Patient Satisfaction - Important Caregiver Burden - Important Cost - Of least importance Impact of Staff Workload - Of least importance

Inclusion and Exclusion Criteria

Inclusion/exclusion criteria	
Publication type	Inclusion: Available in the English language Exclusion: Reports, commentaries, conference proceedings
Population	Inclusion: Studies focused on: people living with dementia or people living in residential aged care Exclusion: Studies specifically targeted to people receiving palliative and end of life care. Studies focused on treatment of delirium or mental health conditions
Intervention	Inclusion: Studies that include or examine interventions to improve use and appropriateness (use was defined as prescribing, dispensing and administration of psychotropic medications) of antipsychotics, benzodiazepines and antidepressants

	Examples include: • Case conference • Medication Advisory Committee meetings • Medication audits • Medication indicator • Quality Use of Medicines services • Staff or resident education • Academic detailing • Staff training • Medication review • Monitoring **This is not an exhaustive list and the search strategy contained a range of other search terms to identify relevant literature, please refer to Appendix1 Exclusion: Studies in which the intervention is not focused on optimising the appropriate use of antipsychotics, benzodiazepines and antidepressants.
Comparator	Inclusion:: Usual care or no intervention or changes made Exclusion: NA
Outcomes	Inclusion: • Changed behaviours • Change in use of antipsychotics, benzodiazepines and antidepressants • Prevalence of antipsychotics, benzodiazepines and antidepressants • Quality of life • Mortality • Adverse events • Patient satisfaction • Caregiver burden • Total use of antipsychotics, benzodiazepines and antidepressants • Cost • Impact of staff workload Exclusion: NA
Setting	Inclusion: Studies that focus on residential aged care and people living with dementia receiving high level care packages Exclusion: Acute hospital setting
Study design	Inclusion: Systematic reviews of RCTs and RCTs Exclusion: NA

Search Results

Search results		
Date	Database	Search results
06 July 2021	Ovid MEDLINE	938
09 July 2021	Ovid Embase	5292
06 July 2021	Ovid PsychInfo	490
06 July 2021	CENTRAL	1779
06 July 2021	CINAHL	350

The evidence synthesis was performed with no date restriction, please refer to Appendix 3 for search strategies

Results

8449 citations were identified from systematic search. After removal of duplicates, 7330 articles were screened for eligibility based on title and abstract. A total of 30 RCTs and 11 systematic reviews were selected for a full text screen. No major clinical trials were identified that may impact the strength or direction of the Guideline recommendations.

Of the 11 systematic reviews identified, a comprehensive and up-to-date article was not identified. The shortlisted systematic reviews were excluded because reviews were not up-to-date, had a narrow focus relating to only one type of intervention (e.g. medication review) or did not perform data analysis.

A systematic review of eligible RCTs was performed by the project team. Thirty RCTs were identified from the title and abstract screening, a further 12 articles were excluded following the full text screen. Reasons for exclusion included lack of reported outcomes data on psychotropic medications specifically, performed in the acute hospital setting, not true RCT, focus of the intervention was not to improve use and appropriateness of psychotropic medications or symposium notes only. Eighteen studies were included in the systematic review.

Eighteen studies assessed interventions to improve use and appropriateness of psychotropic medications (48-64). Of the 18 included studies, 16 were conducted in residential aged care, two studies were conducted through home care services. Of the 18 studies, 14 studies were delivered to a multidisciplinary team and included: RACF staff, prescribers, nurses, pharmacists and other residential aged care personnel. One study delivered the intervention to prescribers only (55) and in three studies it was unclear whether the interventions were delivered to a specific group (51, 54, 64). For more details on study characteristics, refer to Section 0.

The included studies assessed interventions that were often multicomponent and multidisciplinary. All studies were considered but where possible studies were sub-grouped according to the main intervention component of professional education programs or medication review

1. **Professional Education Programs**: Comprise of academic detailing, resource or guideline dissemination and workshop sessions with staff involved in the care of residents. These activities can be done as stand-alone interventions or combined.
2. **Medication Review:** A structured and critical evaluation of medications conducted by a prescriber or an accredited pharmacist.

Included studies reported data was heterogeneous and o effect sizes and/or summary statistics were often unable to be determined. However, all outcomes were summarised narratively.

Use of Psychotropic Medications

Use of psychotropic medications is defined as the number of residents who were prescribed, dispensed or administered a psychotropic medication post-study intervention period. All included studies had some level of assessment or review of medications to determine appropriateness to either change or withdraw the psychotropic medication. No studies conducted non-discriminate deprescribing on participants.

Of the included 18 studies, seven studies assessed interventions involving professional education program delivered to residential aged care staff and health professionals involved with the care of residents as the main component of the intervention (48, 52, 53, 55, 62, 63, 65). Several these studies also had other sub-components to the overall intervention such as medication review, support with on-demand advice, and audit and feedback (52, 53, 55, 62). Of the seven studies, four studies found a reduction in psychotropic use at the study endpoint (48, 53, 55, 56, 65) and three studies found no difference (52, 62, 63).

Pooled analysis of four studies of professional education programs demonstrated a 29% reduction in risk of psychotropic medication use (RR 0.71; 95% CI 0.50,1.02, I^2% 86%)(48, 53, 55, 62).

Six studies delivered academic detailing through a structured and interactive training program (48, 52, 53, 55, 62, 65). One study utilised both academic detailing and passive dissemination (63). None of the studies delivered passive or self-directed learning. Study period ranged from 6 months to 12 months.

Five studies provided sustained education over the study period; however, in the other two studies it was unclear whether the program was sustained over the study period. Six studies delivered professional education program to a multidisciplinary team and one study provided the intervention to prescribers only. In one study it was unclear who the professional education program was delivered by; however, in the other six studies the educator varied and included psychologists, occupational therapists, nurses or nurse educators, pharmacists and expert physicians. Overall, professional education programs seem to reduce the use of psychotropics medications, although there's some uncertainties. Almost all studies had supporting components to the professional education programs.

11 studies assessed medication review. Of 11 studies, eight studies conducted medications reviews targeted at psychotropic medications (50, 51, 56, 57, 59-61, 66) and three studies performed broad medication reviews that included assessment of psychotropic medications (54, 58, 64). Study period ranged from 3 months to 12 months. Pooled analysis of five medication review studies demonstrated a 14% reduction in the risk of psychotropic medication use (RR 0.86; 95% CI 0.70,1.07, I^2% 88%) (57-60, 64). When looking across 11 studies in the medication review subgroup, seven studies were not initiated by the usual prescriber and in four studies it was unclear who initiated the medication review. In four studies the medication review was discussed with the resident at some point during the intervention, in two studies it was not reported to be discussed and five it was unclear whether a discussion was held with the resident. When considering whether a post-medication review case conferences between the reviewing pharmacist and physician and the usual prescriber was conducted, in seven studies it was unclear whether process occurred. In two studies a case conference occurred post-medication review and in one study post-medication case conference was conducted, however it is unclear whether this was uniform across all participants.

All studies within this subgroup contained medication review, however the process of how the medication review was conducted and who conducted it varied.

Pharmacist-led medication review
Of the 11 studies, five studies assessed medications review led by a visiting pharmacist who reported findings to the prescriber to improve prescribing (54, 57, 58, 64, 66). Two studies utilised a pharmacist to perform medications reviews for residents and findings were communicated to the prescriber (54, 58). One study, the pharmacist reviewed residents' medications, discussed findings with the RACF staff and resident or carer, and then met with the GP to discuss the residents' medications (57). One study, the residential aged care nurse conducted a medication risk assessment during a home visit and reported findings to a pharmacist, the pharmacist then conducted a comprehensive medication review and communicated recommendations either in a written report or discussed with the primary care physician (64). One study, a nurse or pharmacist reviewed medication problems to identify participants that required reassessment by the physician (66).

Of the five studies assessing pharmacist-led medication review: one study reported a reduction in residents taking inappropriate psychotropic medications in the intervention group (57); two studies reported that there was no difference between the intervention and usual care group (64, 66); and the remaining two studies found that the intervention reduced the number of psychotropic medications prescribed (48, 50).

Physician-led medication review
Of the 11 studies assessing medication review, two studies assessed medication review led by a physician (50, 59). One study assessed medication review by research psychiatrist who made changes in prescribing and found a decrease in psychotropic use (59). Another study investigated the impact of medication review conducted by a primary care physician or a psychiatry specialist (50). Prescribing decisions were still made entirely by the participants' own physician. This study also delivered education to residential aged care staff on non-pharmacological interventions (person-centred care and social interactions) and antipsychotics) to treat changed behaviours. The study reported a decrease in psychotropic use.

Medication review involving multidisciplinary case-conference
Of the 11 studies assessing medication review, four studies assessed medication review involving multidisciplinary case conference. Case conference is defined as a meeting involving more than two healthcare professionals at the same time to discuss medication use of individual residents (51, 56, 60, 61). One study utilised a regular team meeting of multidisciplinary members for over 12 months and found a decrease in the prescribing of psychotropic medications (60). In one study, two collegial mentors provided support to the residential aged care physician and nursing team and performed multidisciplinary case conferencing over four months, and found a decrease in the prescribing of psychotropic medications (56). One study used two multidisciplinary case conferences with the resident's GP, a geriatrician, a pharmacist, and RACF staff to help improve the quality use of all medications (51). A medication review was conducted by a pharmacist prior to each case conference. The study found a reduction in medication appropriateness index score. One study utilised a structured multidisciplinary medication review supported with education and evaluation and the prescription of any type of psychotropic medications increased in the intervention group, and decreased in the control group (61).

Overall, medication review, despite who it is led by, improves use and appropriateness of psychotropic medications. However, many studies had supporting components to medication review.

Statistically significant heterogeneity was observed in both professional education programs and medication review, suggesting that results from the meta-analysis should be interpreted with caution. This finding is consistent with Coon et al. systematic review on antipsychotics, where the authors were unable to perform a meta-analysis due to heterogeneity between the included studies (67). Reviews on similar topics have experienced similar difficulties (68, 69).

Prevalence of Psychotropic Medications

The reporting of psychotropic medications was different across different studies, with some studies only focused on antipsychotics while others included a combination of antipsychotics, benzodiazepines and antidepressants.

From four studies assessing professional education programs, the pooled prevalence of psychotropic medication use at follow-up was 24% in the usual care group and 22% in the intervention group (48, 53, 55, 62).

From five studies assessing medication review, the pooled prevalence of psychotropic medication use at follow-up was 69% in the usual care group and 61% in the intervention group (57-60, 64).

Changed Behaviours

Ten studies included studies assessed outcomes related to changed behaviours. In most studies changed behaviour was assessed as a secondary outcome. Included studies presented reported outcome data that was unable to be pooled data. All ten studies have been narratively summarised below.

Five medication review studies assessed changed behaviours. One study reported an increase in agitation in the intervention group over the study period (61). One study assessed changed behaviours with the Nursing Home Behaviours Scale and reported no difference between the intervention and usual care groups (51). One study reported a no difference in NPI-NH score between the intervention and usual care group (56).One study found that at the study endpoint those in the intervention group were less likely to have a behaviour disorder compared to those in the usual care group (59). Investigators from the well-being and health for people with dementia (WHELD) study found that there was no difference in CMAI between groups that did or did not receive medication review. Those receiving a medication review had disadvantage in NPI score compared to the group not receiving a review (50).

Five professional education programs studies reported on changed behaviours. One study reported no statistical difference in agitation between the two groups (53). One study assessed changed behaviours with the Nursing Home Behaviours Scale and reported no difference between the intervention and usual care groups (52). Three studies found no differences in behavioural outcomes between groups (48, 62, 65).

Evidence suggests that professional education programs and medication review do not seem to impact on outcomes relating to change behaviours.

Quality of Life

The WHELD study assessed health-related quality of life (measured by the Dementia Quality of Life, DEMQOL system) (70). The WHELD study was a three-arm clustered RCT in which

all participants received an intervention. In one group the impact of an antipsychotic review intervention, social interaction intervention, and exercise intervention was assessed in conjunction with person-centred care (50, 70). One study found that participants with dementia (n=187 residents) receiving an antipsychotic review were associated with a significant worsening of two DEMQOL-Proxy domains (negative emotion and appearance) (50). However, the study group receiving antipsychotic review combined with the social interaction intervention and person-centred care demonstrated an improvement in health-related quality of life scores.

Overall, data is too limited to determine whether interventions to improve use and appropriateness of psychotropic medications have an impact on the quality of life.

Mortality

Three medication review studies reported mortality as an outcome but these data could not be pooled (50, 54, 58). One study assessed medication inappropriateness more broadly and did not specify mortality events by psychotropic medication users, the authors reported 14 deaths in the control group and four deaths in the intervention group over the study period (54). One study reported an odd ratio associated with antipsychotic review of 0.67 (0.39, 1.14), or 30% reduction in mortality in those receiving antipsychotic review (50). One study assessed clinical pharmacy program on medication use more broadly and did not specify mortality events by psychotropic users. The study found that cumulative survival, in terms of individual resident, was better in those receiving the intervention (HR 0.85) compared to controls, however there was no significant difference in mortality rates between the two groups (58).

From the reported data it is unclear whether interventions for improving use and appropriateness of psychotropic medications specifically impact on mortality. Two out of three studies didn't report psychotropic-specific mortality, and the remaining study did not have a usual care group to compare against.

Adverse Event – Falls

One study reported no differences in falls in those who received a medication review and those who did not at 12 months (57).

Four professional education programs studies assessed falls. One study reported event data on participants who had at least one fall in the past 12 months. At follow up falls events was found to be 91/175 in the intervention group and 96/165 in the control group (53). One study reported on rate of residents who fell in the three months prior to the study endpoint, this was reported to be 25.5% in the intervention group and 21.9% in the control group (52). One study assessed general medication appropriateness including psychotropic medications; however, specific data on psychotropic-related falls was not provided. The study found that the number of fallers increased in the control group and did not change significantly in the intervention group (55). One study reported the proportion of falls in the last assessment was 10.8% in the intervention group and 10.3% in the usual care group (62).

Overall, one study found no differences in falls between those given the medication review compared to no review. It is unclear whether professional education programs have an impact on falls.

MONASH University

Evidence Table

PICO
Population: RACF residents
Intervention: Professional Education Program
Comparator: No intervention/usual care/control

Outcome Timeframe	**Study results and measurements**	**Absolute effect estimates**		**Certainty of the Evidence** (Quality of evidence)	**Plain language summary**
		Usual care	Professional Education Program		
Use of Psychotropic Medication[1]	Relative risk: 0.71 (CI 95% 0.5 - 1.02) Based on data from 1657 participants in 4 studies Follow up 3 months - 12 months	**100** per 1000	**71** per 1000	**Low** Due to very serious inconsistency[2]	Professional education program may improve use and appropriateness of psychotropic medications
		Difference: **29 fewer per 1000** (CI 95% 50 fewer - 2 more)			
Prevalence of Psychotropic Medications	Based on data from 1657 participants in 4 studies Follow up 3-12 months	The pooled prevalence of psychotropic medication use at follow-up was 24% in the usual care group and 22% in the intervention group.		**Low** Due to very serious inconsistency[3]	Professional education program may improve prevalence of psychotropic medications
Quality of Life	Based on data from 187 participants in 1 studies			No studies reported this outcome	No studies were found that looked at quality of life.
Mortality				No studies reported this outcome	No studies were found that looked at mortality
Adverse Events - Falls	Based on data from participants in 4 studies	See summary for details.		**Moderate**	Four studies assessed adverse event – falls,

	Follow up 3-12 months		Due to serious inconsistency[4]	results were unable to be pooled due to heterogeneity in reported data. It is unclear whether professional education programs have an impact on falls.
Resident Satisfaction			No studies reported this outcome	No studies were found that looked at resident satisfaction
Caregiver Burden			No studies reported this outcome	No studies were found that looked at caregiver burden
Changed Behaviours	Based on data from 8561 participants in 5 studies	Data was unable to be pooled due to heterogeneity in reported data. Evidence suggests professional education programs do not adversely impact changed behaviours.	**Low** Due to serious risk of bias, Due to serious inconsistency[5]	Professional education programs may have little or no difference on changed behaviours

1. number of residents using a psychotropic medication at study endpoint.
2. **Risk of Bias: no serious.** Incomplete data and/or large loss to follow up, Selective outcome reporting; **Inconsistency: very serious.** The confidence interval of some of the studies do not overlap with those of most included studies/ the point estimate of some of the included studies., The magnitude of statistical heterogeneity was high, with I^2: 85%.
3. **Inconsistency: very serious.** The direction of the effect is not consistent between the included studies.
4. **Risk of Bias: no serious.** Some concerns- but key domains are low concerns ; **Inconsistency: serious.** The direction of the effect is not consistent between the included studies; **Indirectness: no serious.** Some studies had a broad remit but no serious concerns.
5. **Risk of Bias: serious.** Incomplete data and/or large loss to follow up, Selective outcome reporting; **Inconsistency: serious. Imprecision: serious.**

PICO

Population: RACF residents
Intervention: Medication Review
Comparator: No intervention/usual care/control

Outcome		**Absolute effect estimates**		

Timeframe	**Study results and measurements**	Usual care	Medication Review	**Certainty of the Evidence** (Quality of evidence)	**Plain language summary**
Use of Psychotropic Medication[1]	Relative risk: 0.86 (CI 95% 0.7 - 1.07) Based on data from 2396 participants in 5 studies Follow up 3 months - 12 months	**496** per 1000	**427** per 1000	**Low** Due to very serious inconsistency[2]	Medication review may improve use and appropriateness of psychotropic medications
		Difference: **69 fewer per 1000** (CI 95% 149 fewer - 35 more)			
Prevalence of Psychotropic Medications	Based on data from 2396 participants in 5 studies Follow up 3-12 months	Data from five studies on change in psychotropic use could be pooled. The pooled prevalence of psychotropic medication use at follow-up was 69% in the usual care group and 61% in the intervention group.		**Low** Due to very serious inconsistency[3]	Medication review may improve prevalence of psychotropic medications
Quality of Life	Based on data from 187 participants in 1 studies Follow up 9 months			**Low** Due to serious imprecision, Due to very serious imprecision[4]	One study reported conflicting results on quality of life. We are uncertain whether medication review improves or worsen quality of life
Mortality	Based on data from participants in 3 studies Follow up 9-22 months			**Low** Due to very serious indirectness[5]	Data was unable to be pooled from three studies due differences in outcome measures. We are uncertain whether medication review improves or worsen mortality

Adverse Events - Falls	Based on data from participants in 1 studies Follow up 3-12 months		**Low** Due to serious inconsistency, Due to very serious imprecision[6]	One study reported no differences in falls in those who received a medication review and those who did not at 12-months. We are uncertain whether medication review improves or worsen adverse events - falls.
Resident Satisfaction			No studies reported this outcome	No studies were found that looked at resident satisfaction
Caregiver Burden			No studies reported this outcome	No studies were found that looked at caregiver burden
Changed Behaviours	Based on data from 1266 participants in 5 studies Follow up 3 - 12 months		**Low** Due to very serious inconsistency[7]	Five studies reported on changed behaviours. Data could not be pooled due to differences in outcomes measures and lack of raw data. We are uncertain whether medication review improves or worsen changed behaviours.

1. Number of residents using a psychotropic medication at study endpoint.
2. **Risk of Bias: no serious.** Incomplete data and/or large loss to follow up, Selective outcome reporting; **Inconsistency: very serious.** The confidence interval of some of the studies do not overlap with those of most included studies/ the point estimate of some of the included studies., The magnitude of statistical heterogeneity was high, with I^2: 85%.
3. **Inconsistency: very serious.** The direction of the effect is not consistent between the included studies.
4. **Imprecision: very serious.** Only data from one study, Low number of participants.
5. **Indirectness: very serious.** Differences between the population of interest and those studied, two studies had a broad medication class remit.
6. **Risk of Bias: no serious.** Some concerns- but key domains are low concerns ; **Imprecision: very serious.** Only data from one study.

7. **Risk of Bias: no serious.** Some studies had a high risk of bias, however it was deemed not serious; **Inconsistency: very serious.** The direction of the effect is not consistent between the included studies; **Imprecision: serious.**

Study Characteristics

Professional Education Programs								
	Author and year	**Study design/ follow up**	**(n) Facilities/ Setting/ Country**	**Intervention/ medication class**	**SS/ mean age**	**Prescribed /use/ administered/claim**	**Outcomes measured**	**Key finding**
1.	Fossey 2006	Cluster RCT Follow up: 12 months	RACF United Kingdom n = 6 [i] n = 6 [c] Residents with severe dementia	Training and support delivered to RACF staff over 10 months, focusing on alternatives to medications for the agitation in dementia. Medication classes: Antipsychotics	n = 168 [i] n = 181 [c] Mean age: 82 (range 53-101) [c] 82 (range 60-98) [i]	Prescribed	Proportion of residents in each home prescribed antipsychotics Clinical Outcomes: Agitation and disruptive behaviour (CMAI), wellbeing (wellbeing rating), falls	A reduction of antipsychotics
2.	Meador 1997 Secondary analysis-Thapa	RCT Follow Up: 6 months	RACF United States n = 6 [i] n = 6 [c]	Educational program in training residential aged care providers, physicians, nurses, nursing assistants, and other direct care staff to use structured guidelines for	n = 680 [i] n = 631 [c] Mean age: N = 83 [i] N = 84 [c]	Use	Antipsychotic use Withdrawal from antipsychotics Reduction in antipsychotic dose by 50% or more	A reduction of antipsychotics

				management of behavioural symptoms to minimise the use of antipsychotics. Medication classes: Antipsychotics			Clinical Outcomes: Behavioural problems, (Nursing Home Behaviour Problem Scale), items from the Brief Psychiatric Rating Scale, observer-rated psychiatric symptoms (subset of the Brief Psychiatric Rating Scale), Geriatric Depression Scale	
3.	Avorn 1992	Cluster RCT Follow Up: 5 months	RACF United States n = 6 [i] n = 6 [c]	Educational program for health care providers in RACF to attempt to reduce excessive use of sedating medications. Medication classes: Antipsychotics, benzodiazepine hypnotics	n = 431 [i] n = 392 [c] Mean age: NA	Use	Psychoactive drug use: - Proportion of residents who discontinued antipsychotics and benzodiazepines - Number of days of psychotropic therapy per patient per month (divided according to antipsychotics, benzodiazepines, hypnotics) Clinical Outcomes:	Reduction in magnitude and the probable inappropriateness of medication use

							- Cognitive function (mental status, memory, anxiety, behaviour, depression, sleep)	
4.	Tadrous 2020	Cluster RCT Follow up: Prescribing outcomes- 3, 6, and 12 months; clinical outcomes- 3 and 6 months	RACF Canada n = 18 [i] n = 22 [c] 88% of residents had dementia status	Academic detailing was provided by health professionals (pharmacists and nurses) with tailored information to help support residential aged care clinical staff to improve prescribing of antipsychotics, providing additional materials and resources as needed. Academic detailers also responded to questions via email or telephone. Medication classes: Antipsychotics	n = 2303 [i] n = 3060 [c] Mean age: 86 (79-91) [i] 85 (78-90) [c]	Prescribed	Daily antipsychotic use in the past 7 days Mean daily antipsychotic dose (during the previous month) The proportion of residents receiving an antipsychotic prescription (over 24 months i.e. 12 months before and 12 months after) Clinical outcomes: Aggressive Behaviour Scale; Depression Rating Scale, Falls	No significant difference
5.	García-Gollarte 2014	RCT Follow up: 6 months	RACF Spain n = 19 [i] n = 17 [c]	An expert physician in drug use in older people delivered a 10-hour educational programme and two 1-hour workshops to	n = 516 [i] N= 502 [c] Mean age: 84.5 +/- 10.4 [c]	Prescribed	Use of antipsychotics Clinical outcomes: Falls	Higher number using antipsychotics in the control group

				RACF staff to promote practice changes in participants and the educator offered on-demand support for prescriptions. Medication classes: Antipsychotics	84.24 +/- 14.6 [i]			
6.	Tija 2015	Cluster RCT 3 arms Follow up: 12 months	RACF United States n = 13 (Arm 1 – tool kit) n =15 (Arm 2 – tool kit + audit/feedback reports) n =14 (Arm 3 – tool kit + audit/ feedback reports + academic detailing)	Evidence-based guidelines for atypical antipsychotic prescribing were translated into a tool kit for RACF stakeholders, mailed tool kit delivery (minimal intensity); mailed tool kit delivery with quarterly audit and feedback reports about facility-level antipsychotic prescribing (moderate intensity); and in-person toolkit delivery with academic detailing, on-site behavioural management training, and quarterly audit	n = NA Mean age: NA	Prescribed	Atypical antipsychotic prescribing changes	Use declined but not statistically significant

				and feedback reports (high intensity) Medication classes: Antipsychotics				
7.	Crotty and Whitehead 2004	Cluster RCT Follow up: 7 months	Hostels (low level facilities) and RACF (high level facilities) Australia n = 10 [i] n = 10 [c]	Two outreach visits by a pharmacist were conducted. At the first visit a summary of the relevant evidence was provided and at the second visit audit information and feedback about fall rates, psychotropic drug prescribing and stroke risk reduction practices were provided. Medication classes: Psychotropics, antipsychotics and benzodiazepines (PRN and regular)	n = 334 [c] n = 381 [i] Mean age: 83.4 +/ 7.9 [c] 84.7 +/- 7.7 [i]	Prescribed	Use of psychotropic medications by prescription Clinical outcomes: Falls rate, Nursing Home Behaviour Scale – no results reported	Unable to detect statistically significant differences in psychotropic medication use between groups before or after the intervention. The exception was significantly greater use of PRN antipsychotics in the intervention group compared with the control group after the pharmacy intervention.
Medication review								
	Author and year	**Study design, follow up,**	**(n) Setting, country**	**Intervention / medication class**	**SS/ mean age**	**Prescribed /use/ administered**	**Outcomes measured**	**Key finding**
8.	Schmidt 1998	RCT Follow up: 12 months	RACF Sweden	Multidisciplinary team meetings were held regularly for 12 months to influence	n = 626 [i] n = 1228 [c] Mean age:	Prescribed	Level of psychotropic medications prescribing	Significant decrease in the prescribing of

			n = 15 [i] n =18 [c] 42% of residents had dementia status	medication use through improved teamwork. Medication classes: Benzodiazepines hypnotics and anxiolytics, antipsychotics, antidepressants	83 [i] 84 [c]			psychotropic medications
9.	Gedde 2020	Cluster RCT Follow Up: 4 months	RACF Norway n = 67 nursing units in 33 homes	A component of the intervention was medication reviews with collegial mentoring. The RACF physician performed medication reviews with a nurse and two research physicians, who provided the collegial mentoring. Medication classes: Antipsychotics, anxiolytics, hypnotics or sedatives and antidepressants	n = 217 [i] n = 211 [c] Mean age: 86.28 (7.95SD) [i] 86.6 (7.21 SD) [c]	Prescribed	Mean change in the number of prescribed psychotropic medications Clinical outcomes: Behavioural and Psychological Symptoms of Dementia (BPSD) (NPI-NH, CSDD)	The mean change in prescribed psychotropic medications was reduced both in total and regular number.
10.	Rovner 1996	RCT Follow up: 6 months	RACF United States n = 1	Activities, guidelines for psychotropic medications, and educational rounds were used with psychiatrists taking	n = 42 [i] n = 39 [c] Mean age: 82 (8 SD) [i]	Use	Antipsychotic use (medical records) Clinical outcomes: Behaviour disorders (The Psychogeriatric	Control group was twice more likely to receive antipsychotics

			Residents with dementia	over psychotropic medication prescribing during the intervention. Medication classes: Antipsychotics	81.2 (7.2 SD) [c]		Dependency Rating Scale Behaviour Subscale (PGDRS), CMAI	
11.	Patterson 2010	Cluster RCT Follow up: 3, 6 and 12 months	RACF Northern Ireland n = 11 [i] n = 11 [c] 33% of residents had dementia status	Pharmacists visited intervention homes and reviewed residents clinical and prescribing information, assessed the appropriateness of psychoactive medication using an algorithm, and worked with prescribers to improve the prescribing of these medications. Medication classes: anxiolytics, hypnotics, or antipsychotics	n = 161 [c] n = 173 [i] Mean age: 82.9+/- 8.4 [c] 82.6+/- 8.4 [i]	Prescribed	Proportion of residents prescribed one or more inappropriate psychoactive (anxiolytic, hypnotic, or antipsychotic) medications Change in the number of inappropriate psychoactive medications Clinical outcomes: Falls - difference in the rate of falls per 100 resident-months	The proportion of residents taking inappropriate psychoactive medications was lower in the intervention homes
12.	Toivo 2019	Cluster RCT Follow Up: 12 months	Home care service areas Finland N = 5	Nurses made a medication risk assessment during home visits and reported findings to the coordinating pharmacist. The	n =104 [i] n = 87 [c] Mean age = 81.6 (7.1 SD) [i]	Use	Use of potentially inappropriate medications and psychotropic medications	The intervention did not show an impact on the medication risks

				coordinating pharmacist prepared the case meetings with the physician and home care nurse to decide on further actions. The physicians made the final decision on medication changes needed. Medication classes: Benzodiazepines and related drugs, antidepressants, antipsychotics	84 (6.8 SD) [c]		Use of psychotropic medications Proportion of study participants using >3 psychotropic medications, n (%) Proportion of study participants using antipsychotics, n (%), benzodiazepines, n (%)	
13.	Smeets 2020	Cluster RCT Follow up: 6, 12 and 18 months	RACF Netherlands n = 7 [i] n = 6 [c]	Structured multidisciplinary medication review, and supported by education and evaluation. Medication classes: antipsychotics, antidepressants, hypnotics and anxiolytics	n = 222 [i] n = 158 [c] Mean age: 84 (7.4SD) [i] 83 (7.3 SD) [c]	Prescribed	Prevalence of psychotropic medication use for BPSD Clinical outcomes: Neuropsychiatric symptoms (NPI -Q severity, NPI-Q distress, CMAI)	The prescription of any type of psychotropic medications increased in the intervention group, and decreased in the control group
14.	Meredith 2002	RCT Follow up: 6 weeks (but	Home-health agencies – in home care	The pharmacist and the patient's nurse jointly reviewed the medication problems	n = 157 [c] n = 160 [i] Mean age:	Use	Medication use (in-home interview, with container inspection)	There were no significant improvements for

		could be up to 90 days)	United States	identified from the available medical history and applied the study guidelines to determine whether reassessment by the physician was warranted. Structured templates were used to develop a plan to address the identified problem. Medication classes: benzodiazepines, antidepressants, antipsychotics	79.8 +/- 8.7 [c] 80.3+/-7.4 [i]		The proportion of patients with medication use improvement Clinical outcomes: Quality of life (SF-26) (reported only at baseline)	the psychotropic medication use
15.	Furniss 2000	Cluster RCT Follow up: 8 months	RACF United Kingdom n = 7 [i] n = 7 [c]	Pharmacist collected details of current medication from Medicines Administration Record (MAR) charts, with a brief medical history and any current problems identified by the staff. Medication classes: Hypnotics/anxiolytics (benzodiazepines), antipsychotics, antidepressants	n = 172 [c] n = 158 [i] Mean age: 78.9 (13.7SD) [c] 83.5 (9.2 SD) [i]	Prescribed	Percentage of residents on hypnotics/anxiolytics, antipsychotics, antidepressants Clinical outcomes: Crichton-Royal Behaviour Rating Scale (CRBRS), mortality	The number of medications prescribed reduced in the intervention group but the intervention group experienced greater deterioration in cognitive function and behavioural disturbance than the control group

16.	WHELD study Ballard 2016 Ballard 2016 Ballard 2017	Factorial RCT 2x2x2 with 2 replications 2016 follow up: 9 months	RACF United Kingdom n =16 homes All 16 homes received an intervention to implement person-centred care Eight RACFs were randomly assigned to antipsychotic review, eight to an intervention to increase social interaction, and eight to an exercise intervention	A combination of person-centred care, antipsychotic review, social interaction with pleasant activities and exercise. Antipsychotic review was based on the National Institute for Health and Care Excellence (NICE) dementia guidelines and focused on review of antipsychotic prescriptions Medication classes: Antipsychotics	n = 146 (antipsychotic review) n = 131 (no antipsychotic review) Mean age: 85.28 (7.03 SD) – antipsychotic review 85.24 (7.04 SD) – no antipsychotic review	Use	Antipsychotic use, other psychotropic use Clinical outcomes: Agitation (CMAI), and depression (CSDD), overall neuropsychiatric symptoms (NPI-NH) and mortality, quality of life (health related – QoL)	Reduced antipsychotic use
17.	Roberts 2001	Cluster RCT Follow up: 12 months	RACF Australia n = 13 [i] n = 39 [c]	A clinical pharmacy program that involved development of professional relationships, nurse education on	n = 905 [i] n = 2325 [c] Mean age: 47.4% (80-89) [i]	Administered	Continuous drug use data from government prescription subsidy claims, cross-sectional drug use	Reduction in use with no change in morbidity indices or survival.

		22 month survival follow up		medication issues, and individualised medication reviews Medication classes: Antipsychotics + benzodiazepine hypnotics	46.7% (80-89) [c]		data on prescribed and administered medications Percentage of residents being administered psychotropic medication at the end of the study. Clinical outcomes: Mortality, adverse events (mean (95%CI))	
18.	Crotty and Halbert 2004	Cluster RCT 3 arms Follow up: 3 months	RACF Australia n = 5 [i] n = 5 [c]	Two multidisciplinary case conferences with the resident's GP, a geriatrician, a pharmacist, and RACF staff to help improve quality use of all medications. Medication classes: Benzodiazepines	n = 50 [wfc] n = 50 [c] Mean age: 83.6 (81.3-85.9) [c] 84.6 (83.2-86) [wfc] 85.3 (84.0–86.6) [i]	PBS claim	Medication Appropriateness Index (MAI) Monthly drug costs for all regular medications on the government's PBS schedule Clinical outcomes: Resident's behaviour (The Nursing Home Behaviour Problem Scale)	A reduction in the MAI for benzodiazepines

SS – sample size, RACF – residential aged care, RCT – randomised controlled trial

Forest Plot

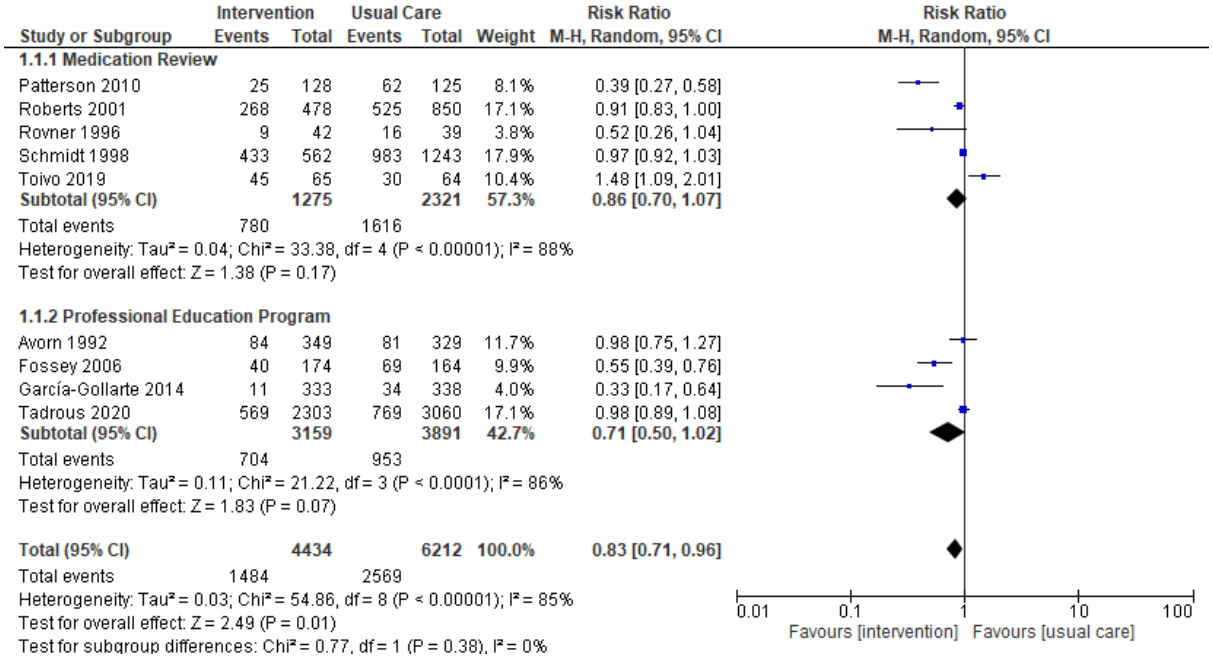

Figure 1 Forest plot of use of psychotropic medications

Risk of Bias

Cochrane Risk of Bias 2 tool was used to assess study bias.

	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Overall
Gedde 2020	1a. Low 1b. Low	Some concerns	Low	High	Low	High
Fossey 2006	1a. Low 1b. Low	Low	Low	Low	Low	Low
Meador 1997	Low	High	High	Some concerns	Some concerns	High
Schmidt 1998	Low	Some concerns	High	Low	Low	High
Avorn 1992	1a. Low 1b. Some concerns	Some concerns	High	Low	High	High
Rovner 1996	Low	Low	High	Some concerns	Some concern	High
Ballard 2016	Low	High	Low	Low	Low	High
Ballard 2017	1a. Low 1b. Low	Some concerns	Low	Low	High	High
Smeets 2020	1a. High 1b. High	Some concerns	High	High	High	High
Tadrous 2020	1a. Some Concerns 1b. Low	High	Some concerns	Low	Some concerns	High
Tija 2015	1a. Some Concerns 1b. Low	Some concerns	High	Some concerns	Some concerns	High
Crotty and Halbert 2004	1a.Low 1b. Low	Low	Low	High	High	High
Crotty and Whitehead 2004	1a. Some concerns 1b. Some concerns	High	High	Low	Low	High
Furniss 2000	1a. Low 1b. Low	High	High	Low	Low	High
Meredith 2002	Low	High	Low	Some concerns	High	High
Roberts 2001	1a. Low 1b. Low	Some concerns	Low	Some concerns	Low	Some concerns

Garciea-Gollarte 2014	1a. Low 1b. Low	High	Some concerns	Low	Some concerns	High
Toivo 2019	1a. Some concerns 1b. Low	some concerns	Low	Some concerns	some concerns	some concerns
Patterson 2010	1a. Low 1b. Low	Some concerns	Low	Low	Some concerns	Some concerns

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Appendices

Appendix 1 – Adaptation and Alignment of Recommendations

In people living with dementia and changed behaviours, what are the risks and benefits of antipsychotic medication use compared to not using antipsychotics? Should people living with dementia and changed behaviours be treated with SGAs compared to FGAs?		
Guideline	Recommendation	Adapted or Adopted by the Guideline Development Group
Cognitive Decline Partnership Centre Dementia Guidelines (2016)	**(EBR 91)** People with dementia and severe behavioural and psychological symptoms of dementia (BSPD) (i.e., psychosis and/or agitation/aggression) causing significant distress to themselves or others, may be offered treatment with an antipsychotic medication. Risperidone has the strongest evidence for treating psychosis. Risperidone and olanzapine have the strongest evidence for treating agitation/aggression, with weaker evidence for aripiprazole. The following conditions should also be met: • There should be a full discussion with the person with dementia and their carers and family about the possible benefits and risks of treatment. In particular, cerebrovascular risk factors should be assessed and the possible increased risk of stroke/transient ischaemic attack and possible adverse effects on cognition should also be discussed. • Target symptoms should be identified, quantified and documented. • The effect of comorbid conditions, such as depression, should be considered. • The choice of antipsychotic should be made after an individual risk–benefit analysis. • The dose should be initially low and titrated upwards if necessary. • Monitoring for adverse effects including the metabolic syndrome should occur. • If there is no efficacy observed within a relatively short timeframe (usually one to two weeks), treatment should be discontinued. Treatment should be reviewed every four to 12 weeks, considering the need for antipsychotics and possible cessation of medication. Review should include regular assessment and recording of changes in cognition and target symptoms.	Adapted for CR1 Adapted for CR2 Adapted for CR3 Adapted for GPS 1 Adapted for GPS 5
	(92 PP) Where people with dementia have moderate to severe behavioural and psychological symptoms of dementia that puts themselves or others at risk, referral to a specialist service for the management of behavioural and psychological symptoms should occur.	Adapted for CR3
	(EBR 89) People with Alzheimer's disease, vascular dementia or mixed dementias with mild-to-moderate behavioural and psychological symptoms of dementia should not usually be prescribed antipsychotic medications because of the increased risk of cerebrovascular adverse events and death	Adapted for CR2
	(EBR 90) As far as possible, antipsychotics should be avoided in people with Dementia with Lewy Bodies due to the risk of severe untoward reactions, particularly extrapyramidal side effects. Acetylcholinesterase inhibitors could be considered. If antipsychotics are used for severe behavioural and psychological symptoms of dementia, atypical or second-generation antipsychotics with low propensity to cause extrapyramidal side effects should be used; quetiapine and olanzapine are considered to have the best tolerability. Healthcare professionals should use low dosage and closely monitor for adverse effects	Adapted for GPS 2
	(77 PP) People with dementia who develop behavioural and psychological symptoms of dementia should usually be treated using non-pharmacological approaches in the first instance. Pharmacological intervention should usually only be offered first if the person, their carer(s) or family is severely	Adapted for GPS 1

	distressed, pain is the suspected cause, or there is an immediate risk of harm to the person with dementia or others (i.e., very severe symptoms). If pharmacological management is used, this should complement, not replace, non-pharmacological approaches	Adapted for GPS 3 Adapted for GPS 4
	(79 PP) Pharmacological intervention should usually only be offered first if the person, their carer(s) or family is severely distressed, pain is the suspected cause, or there is an immediate risk of harm to the person with dementia or others (i.e., very severe symptoms).	Adapted for CR2
Therapeutic Guidelines (eTG 2021)	Antipsychotics for agitation, aggression or psychosis of dementia If non-pharmacological management does not alleviate agitation, aggression or psychosis of dementia and symptoms are distressing for the patient, or the patient is considered a threat to themselves or others, consider the benefit–harm profile of antipsychotic use for the patient If immediate intervention is not required, engage in shared decision making with the patient or their substitute decision-maker. Discuss: ▪ the purpose, limitations and risks associated with antipsychotic use and the importance of combining antipsychotic use with non-pharmacological interventions ▪ adverse effects associated with antipsychotic use and how these effects are monitored, and potentially prevented or addressed. If antipsychotic therapy is agreed upon, perform baseline tests to help guide antipsychotic choice. If immediate intervention is required, as soon as practical, discuss antipsychotic therapy with the patient or their substitute decision-maker and perform baseline tests. If an antipsychotic is considered necessary for agitation, aggression or psychosis of dementia that is **not** associated with Lewy bodies or Parkinson's disease, use: • risperidone 0.25 mg orally, twice daily. If needed, increase the dose by 0.25 mg twice daily every 2 or more days. Maximum of 2 mg daily in 1 or 2 doses. Use the lowest effective dose for the shortest period of time; OR • olanzapine 2.5 mg orally, daily. If needed, increase the dose by 2.5 mg daily every 2 or more days. Maximum of 10 mg daily in 1 or 2 doses. Use the lowest effective dose for the shortest period of time If aripiprazole is considered, seek expert advice on dosage. For advice on neuropsychiatric symptoms associated with Parkinson's disease, see here. If an antipsychotic is considered necessary for agitation, aggression or psychosis of dementia associated with Lewy bodies (i.e. rivastigmine or donepezil is inadequate), use: • quetiapine immediate-release 12.5 to 25 mg orally, once or twice daily. • If needed, increase the dose by 12.5 to 25 mg daily every 2 or more days. Maximum of 75 mg twice a day. Use the lowest effective dose for the shortest period of time Follow-up and duration of antipsychotic therapy for agitation, aggression or psychosis of dementia When an antipsychotic is used to treat a behavioural and psychological symptom of dementia, effectiveness will be evident within 2 weeks of starting therapy; during this time, review the target behaviour weekly and stop the antipsychotic if no benefit is seen [Note 14]. Also stop the antipsychotic if a problematic adverse effect occurs. If the patient tolerates the antipsychotic and is experiencing an improvement in the target symptom, continue therapy and review response every 4 to 6 weeks. Also monitor for antipsychotic adverse effects according to the schedule set out here. If the patient is not receiving an obvious ongoing benefit or a problematic adverse effect occurs, stop the antipsychotic. Avoid continuing an antipsychotic for longer than 12 weeks to treat agitation, aggression or psychosis of dementia because behavioural and psychological symptoms are often temporary.	Adapted for GPS 1 Adapted for GPS 2 Adapted for GPS 4 Adapted for GPS 5 Adapted for GPS 6

	Behavioural and psychological symptoms are often temporary; avoid using an antipsychotic to treat agitation, aggression or psychosis of dementia for longer than 12 weeks. If the antipsychotic is stopped within 12 weeks and the patient's symptoms were not initially severe, the antipsychotic can be stopped abruptly. However, if the antipsychotic has been continued for 12 weeks or longer, or symptoms were initially severe, consider slowly reducing the antipsychotic dose to reduce the risk of withdrawal effects—a similar approach to that described in Deprescribing a long-term antipsychotic for behavioural and psychological symptoms of dementia may be used. Note 14: Stop the antipsychotic if it is used for a behaviour or psychological symptom of dementia other than agitation, aggression or psychosis (e.g. wandering).	
EBR – evidence-based recommendation, PP – practice point		

For people living with dementia who have commenced antipsychotic medication, should medication be discontinued?		
Guideline	Recommendation	Adapted or Adopted by the Guideline Development Group
Canadian Family Physician Guideline (2018)	For adults with behavioural and psychological symptoms of dementia treated for at least 3 months (symptoms stabilised or no response to adequate trial), we recommend the following: • Taper and stop antipsychotics slowly in collaboration with the patient and caregivers: e.g., 25%-50% dose reduction every 1 to 2 weeks (strong recommendation, moderate-quality evidence)	
Cognitive Decline Partnership Centre Dementia Guidelines (2016)	**(92 PP)** Where people with dementia have moderate to severe behavioural and psychological symptoms that put themselves or others at risk, referral to a specialist service for the management of behavioural and psychological symptoms should occur	Adapted for GPS 8
Cognitive Decline Partnership Centre Dementia Guidelines (2016)	**(EBR 91)** People with dementia and severe behavioural and psychological symptoms of dementia (i.e., psychosis and/or agitation/aggression) causing significant distress to themselves or others, may be offered treatment with an antipsychotic medication. Risperidone has the strongest evidence for treating psychosis. Risperidone and olanzapine have the strongest evidence for treating agitation/aggression, with weaker evidence for aripiprazole. The following conditions should also be met: • There should be a full discussion with the person with dementia and their carers and family about the possible benefits and risks of treatment. In particular, cerebrovascular risk factors should be assessed and the possible increased risk of stroke/transient ischaemic attack and possible adverse effects on cognition should also be discussed. • Target symptoms should be identified, quantified and documented. • The effect of comorbid conditions, such as depression, should be considered. • The choice of antipsychotic should be made after an individual risk–benefit analysis. • The dose should be initially low and titrated upwards if necessary. • Monitoring for adverse effects including the metabolic syndrome should occur. • If there is no efficacy observed within a relatively short timeframe (usually one to two weeks), treatment should be discontinued.	Adapted for GPS 10 Adapted for GPS 7

	Treatment should be reviewed every four to 12 weeks, considering the need for antipsychotics and possible cessation of medication. Review should include regular assessment and recording of changes in cognition and target symptoms.	
Therapeutic Guidelines (eTG 2021)	Patients taking an antipsychotic long term (for 12 weeks or longer) for a behavioural and psychological symptom of dementia can usually stop the antipsychotic without their symptom worsening. Rarely, patients will experience a worsening of symptoms if their symptoms were initially severe (e.g. psychotic features, violent aggression)—seek expert (e.g. psychiatrist, neurologist, geriatrician) advice before deprescribing. Patients whose symptoms were not initially severe can become less agitated when the antipsychotic is stopped. If symptoms were not initially severe, agitation can improve when the antipsychotic is stopped. If an antipsychotic has been used to treat behavioural and psychological symptoms of dementia for 12 weeks or longer, begin deprescribing if: • any of the criteria for stopping an antipsychotic set out in Follow-up and duration of antipsychotic therapy for agitation, aggression or psychosis of dementia are met (e.g. target symptoms have not improved) • it is used for a behavioural or psychological symptom of dementia other than agitation, aggression or psychosis (e.g. wandering) • target symptoms appear stable. Simultaneously engage in shared decision making with the patient or their substitute decision-maker and, if they consent their family, carers or significant others. Discuss: • the role of antipsychotic therapy in achieving the patient's treatment goals • the deprescribing process (see below), including that it is a trial and the antipsychotic can be restarted if required • any fears and concerns the patient or their substitute decision-maker, family, carers or significant others have about deprescribing • the benefits and harms of deprescribing. Potential benefits include improvements in cognition and behaviour, and a reduced risk of mortality, falls, fractures, cerebrovascular events and other adverse effects. Potential harms include worsening of behavioural symptoms and withdrawal effects if the antipsychotic is stopped too abruptly; however, these responses are uncommon. On the basis of these discussions, collaboratively develop a plan [Note 15] that sets out the approach to monitoring, dosage adjustment, optimising nonpharmacological management (which is especially important if symptoms re-emerge) and indicators for restarting an antipsychotic. Involve relevant healthcare professionals in the plan's development. Despite limited evidence that it is safe to abruptly stop an antipsychotic used long term for behavioural and psychological symptoms of dementia, it may be preferable to slowly reduce the dosage to reduce the risk of behavioural symptoms worsening and antipsychotic withdrawal symptoms. Reduce the dose by 25 to 50% every 1 to 2 weeks until the lowest practical dose is reached, then after 1 to 2 weeks, stop the antipsychotic. Consider a slower dosage reduction schedule for patients who were taking a high dose of an antipsychotic or who had severe symptoms initially. During dose reduction, assess target symptoms and monitor for withdrawal symptoms every 1 to 2 weeks (i.e. every time a dose reduction is made) or more frequently if the patient was taking a high dose of an antipsychotic or had severe symptoms initially. If target symptoms become significant or severe withdrawal adverse effects occur, consider restarting the antipsychotic at the minimum effective dose and re-trial deprescribing after 3 months.	Adapted for CR4 Adapted for GPS 5
New South Wales Therapeutic Group (2018)	Deprescribing triggers: Inappropriate indication, no current indication, presence or risk of adverse events, drug interaction, drug-disease interaction, high drug burden index (DBI),1 poor adherence, or patient preference. 1a) Is there a documented indication or symptoms supporting continued use? Inappropriate indication for continued use: Incomplete assessment of physical and environmental triggers for behavioural disturbances with lack of non-pharmacological trial. • Behavioural and psychological symptoms of dementia treated ≥ 3 months. • Being used to treat behavioural and psychological symptoms of dementia that are likely to be unresponsive to medications (e.g. wandering). • Potential for improvement in cognitive function due to adverse events Do not deprescribe if:	Adapted for GPS 7 Adapted for GPS 8

	• Pre-existing psychiatric comorbidity (e.g. Schizophrenia or Bipolar Disorder) without discussing with psychiatrist. • Severe behavioural and psychological symptoms of dementia (e.g. violent aggression) without discussing with psychiatrist.	
EBR – evidence-based recommendation, PP – practice point		

In people living with dementia and changed behaviours, what are the risks and benefits of benzodiazepine use compared to not using benzodiazepines? For people living with dementia who have commenced benzodiazepine, should medication be discontinued?		
Guideline	**Recommendation**	Adapted or Adopted by the Guideline Development Group
Cognitive Decline Partnership Centre Dementia Guidelines (2016)	**(CBR 97)** If parenteral medication is necessary for the control of violence, aggression and extreme agitation in people with dementia, olanzapine or lorazepam are preferred. Wherever possible, a single agent should be used in preference to a combination.	Adapted for CR5
Therapeutic Guidelines (eTG 2021)	Avoid using benzodiazepines to treat agitation, aggression and psychosis of dementia—there is limited evidence of benefit and they are associated with serious adverse effects including cognitive decline, urinary incontinence, falls, hip fractures and dependence [Note 10]. Benzodiazepine use has also been associated with increased all-cause mortality. If an antipsychotic or an antidepressant cannot be used, a benzodiazepine with a (comparatively) short half-life and no active metabolites (e.g. oxazepam) may be considered for agitation, aggression or psychosis of dementia for a maximum of 2 weeks—closely monitor the patient for adverse effects.	Adapted for CR5 Adapted for CR6 Adapted for GPS 11 Adapted for GPS 13 Adapted for GPS 14
Australian Medicine Handbook (2021)	Benzodiazepine: Short-term use (e.g. <2 weeks) may be helpful for symptoms such as anxiety, irritability and insomnia. Benzodiazepines may also be useful as single doses to allay anxiety and agitation when they can be anticipated, e.g. minor surgical procedure or dental visit. e.g. oxazepam 7.5 mg orally 1–3 times a day; up to 15 mg as a single dose. Maximum 30 mg daily.	Adapted for CR5 Adapted for GPS 12 Adapted for GPS 13
Royal Australia College of General Practitioners – Silver Book (2019)	Benzodiazepines may exacerbate cognitive impairment in dementia and increase the risk of falls and associated injury; however, these can be used for severe anxiety and agitation. Oxazepam is a common choice due to its short half-life and uncomplicated metabolism.[17] Benzodiazepines can be used in an 'as needed' capacity for times when behaviours escalate; however, general practitioners (GPs) need to be aware of the associated adverse effects (especially falls in older people).	Adapted for CR5 Adapted for CR6
CBR –Conditional recommendation, PP – practice point		

In people living with dementia and changed behaviours, what are the risks and benefits of antidepressant medication use compared to not using antidepressants?

Guideline	Recommendation	Adapted or Adopted by the Guideline Development Group
Cognitive Decline Partnership Centre Dementia Guidelines (2016)	**(86 EBR)** People with dementia who experience agitation should be offered a trial of selective serotonin reuptake inhibitor (SSRI) antidepressants (the strongest evidence for effectiveness exists for citalopram) if non-pharmacological treatments are inappropriate or have failed. Review with evaluation of efficacy and consideration of deprescribing should occur after two months. The need for adherence, time to onset of action and risk of withdrawal effects and possible side effects should be explained at the start of treatment.	Adapted for CR7 Adapted for CR11 Adapted for GPS 17 Adapted for GPS 18 Different to CR11 Adapted for GPS 23
	(87 PP) Antidepressant medications with anticholinergic effects (e.g., tricyclic antidepressants) should be avoided because they may adversely affect cognition	Adapted for GPS 19
	(88 EBR) The role of antidepressants in the treatment of depression in people with dementia is uncertain. Larger trials conducted in people with dementia have not shown benefit (in group data) for antidepressants for treatment of depression per se. Nevertheless, it is considered that those with a pre-existing history of major depression (prior to developing dementia) who develop a co-morbid major depression should be treated in the usual way	Adapted for CR8
Therapeutic Guidelines (eTG 2021)	Comprehensively assess a patient with dementia who has a depressed mood to exclude differential diagnoses, determine factors contributing to symptoms and assess severity; Treat a patient with dementia who has major depression by optimising non-pharmacological interventions and offering psychological therapies. There is a lack of evidence to support the use of antidepressants for major depression in dementia—a Cochrane review [Note 16] found they had limited or no efficacy. Antidepressants are associated with adverse effects (e.g. dry mouth, dizziness, hyponatraemia) and increase the risk of falls and fractures in older people. Nevertheless, consider starting an antidepressant for major depression in dementia if the patient has: • **mild to moderate major depression** that does not respond to non-pharmacological therapies within 4 to 6 weeks • **moderate major depression** and has previously responded well to an antidepressant • **severe major depression**. If possible, use an antidepressant to which the patient has responded—see Antidepressant regimens. Avoid using an antidepressant with significant anticholinergic effects (e.g. tricyclic antidepressants), which can impair cognition and increase the risk of delirium. If the patient has not previously taken an antidepressant, citalopram, escitalopram and sertraline are commonly used. In choosing an antidepressant, consider the: • risk of drug interactions • risk of QT-interval prolongation • patient's comorbidities. If an antidepressant is appropriate for depression in dementia, use:	Adapted for CR10 Adapted for CR11 Adapted for GPS 19 Adapted for GPS 20 Adapted for GPS 22 Adapted for GPS 23

	• citalopram 20 mg orally, in the morning; maximum daily dose of 40 mg. For patients older than 65 years, use 10 mg orally, in the morning; maximum daily dose of 20 mg. See below for follow-up and duration of therapy OR • escitalopram 10 mg orally, in the morning; maximum daily dose of 20 mg. For patients older than 65 years, use 5 mg orally, in the morning, maximum daily dose of 10 mg. See below for follow-up and duration of therapy OR • sertraline 50 mg orally, in the morning; maximum daily dose of 200 mg. See below for follow-up and duration of therapy. Throughout antidepressant therapy, regularly review treatment response and monitor for adverse effects. If an unacceptable adverse effect is experienced, switch to an antidepressant less likely to cause the adverse effect and consider seeking specialist advice. If, after 2 to 4 weeks of antidepressant therapy: • the patient fully responds, continue at the same dose for at least 6 months then stop—take additional care when stopping antidepressants in patients with severe dementia because they are more likely to develop depressive symptoms • the patient partially responds or does not respond, consider and address reasons for poor response—see Box 8.30. If there is no explanation for the poor response, increase the dose then review after 2 to 4 weeks of treatment at the higher dose. If depressive symptoms persist at the maximum tolerated dose, consider specialist referral.	
EBR – evidence-based recommendation, PP – practice point		

In people living with dementia and changed behaviours, what are the risks and benefits of pro re nata (PRN) antipsychotic use compared to regular antipsychotic use? In people living with dementia and changed behaviours, what are the risks and benefits of pro re nata (PRN) benzodiazepine use compared to regular benzodiazepine use?		
Guideline	Recommendation	Adapted or Adopted by the Guideline Development Group

Cognitive Decline Partnership Centre Dementia Guidelines (2016)	**(93 PP)** Health professionals who use medication in the management of violence, aggression, and extreme agitation in people with dementia should: • be trained in the correct use of medications for behavioural control • be able to assess the risks associated with pharmacological control of violence, aggression, and extreme agitation, particularly in people who may be dehydrated or physically ill • understand the cardio-respiratory effects of the acute administration of any medications used and the need to titrate dosage to effect • recognise the importance of positioning people who have received these medications in the recovery position and of monitoring vital signs • be familiar with and trained in the use of resuscitation equipment • undertake annual retraining in resuscitation techniques • understand the importance of maintaining a clear airway • be knowledgeable about the laws for informed consent in their jurisdiction. **(94 PP)** If medications are necessary for the control of violence, aggression and extreme agitation in people with dementia, oral medication should be offered before parenteral medication **(95 PP)** There is a paucity of evidence regarding the efficacy and safety of parenteral medication in behavioural emergencies. However, in certain rare situations, parenteral medication may be required for the management of people with dementia with extreme behavioural and psychological symptoms of dementia. Because circumstances vary from setting to setting, local evidence-based guidelines should be developed to provide clinicians guidance about the appropriate use of parenteral medication in these situations for that setting (e.g., the Handbook for NSW Health Clinicians addressing assessment and management of behavioural and psychological symptoms of dementia [BPSD]). **(96 PP)** If parenteral treatment is necessary for the control of violence, aggression and extreme agitation, intramuscular administration is preferable because it is safer than intravenous administration. Intravenous administration should be used only in exceptional circumstances. Vital signs should be monitored after parenteral treatment. Health professionals should be aware that loss of consciousness can be mistaken for sleep. If the person appears to be or is asleep, more intensive monitoring is required because of the risk of loss of consciousness **(97 CBR)** If parenteral medication is necessary for the control of violence, aggression, and extreme agitation in people with dementia, olanzapine or lorazepam are preferred. Wherever possible, a single agent should be used in preference to a combination. **(98 PP)** People with dementia who have received involuntary sedation should be offered the opportunity, along with their carer(s) and family, to discuss their experiences and be provided with a clear explanation of the decision to use urgent sedation. This should be documented in their notes.	Adapted for CR12 Adapted for GPS 26 Adapted for GPS 24 Adapted for CR12 Adapted for GPS27
CBR – conditional recommendation, PP – practice point		

Appendix 2 – AMSTAR Appraisals

Maglione et al. Off-Label Use of Atypical Antipsychotics: An Update. Comparative Effectiveness Review No. 43. Agency for Healthcare Research and Quality 2011		
Item	DG answer	Comment/Examples:
1.	Yes	**Population:** People with dementia or Alzheimer's disease in outpatient and RACF **Intervention:** Antipsychotic medication **Comparison:** **Primary Outcomes:** changed behaviours – psychosis, changed behaviours – agitation **Secondary Outcomes:**
2.	Yes	Protocol registered online – update to original plan Review Questions – yes Search strategy – yes Inclusion/exclusion criteria – yes ROB – unsure Meta-analysis plan – yes Plan for investigating heterogeneity - ?? Justification for deviations from protocol - ??
3.	Yes	Explanation given for including RCT and NRSI
4.	Yes	Search strategy comprehensive
5.	Yes	Two reviewers performed study selection
6.	Yes	Data extraction done in duplicate
7.	Yes	Excluded studies included and justified
8.	Yes	Table of study characteristics
9.	Unsure	Unsure
10.	Yes	Source of funding looked for
11.	Yes	Meta – analysis
12.	Yes	Performed analysis to investigate possible impact
13.	Unsure	Unsure
14.	Yes	Heterogeneity explained
15.	Yes	Publication bias investigated
16.	Yes	Conflict of interest

Maher et al. Efficacy and Comparative Effectiveness of Atypical Antipsychotic Medications for Off-Label Uses in Adults: A Systematic Review and Meta-analysis. JAMA 2011		
Item	DG answer	Comment/Examples:
1.	Yes	**Population:** People with dementia **Intervention:** Atypical antipsychotic medication **Comparison:** placebo and head-to-head **Primary Outcomes:** symptom scores, response rates, laboratory data, and time to disease recurrence; for effectiveness, we will report outcome measures such as general health outcomes (e.g., SF-36), quality of life, and mortality **Secondary Outcomes:**
2.	Yes	Protocol registered
3.	Yes	Included RCT and Observational *"Observational studies with sample sizes of greater than 1000 patients were included to assess adverse events"*
4.	Yes	**Databases**

		• DARE (Database of Abstracts of Reviews of Effects) • Cochrane library of systematic reviews • CENTRAL (Cochrane Central Register of Controlled Trials) • PubMed (National Library of Medicine, includes MEDLINE) • EMBASE (Biomedical and pharmacological bibliographic database) • CINAHL (Cumulative Index to Nursing and Allied Health Literature) • PsycINFO (Journals, books, reports, and dissertations on psychology and related fields) **Other sources** • Clinicaltrials.gov • References of included studies • References of relevant reviews • Personal files from related topic projects Conducted in 2009
5.	Yes	Done by 2 reviewers
6.	No	*"For efficacy/effectiveness outcomes, a statistician will extract data. The psychiatrist will choose which outcomes are most appropriate to pool. Poolability across studies is also important; the psychiatrist, the statistician, and the project team will jointly make the selection based on their professional knowledge and also considering the frequency of an outcome measure being reported by the trials"*
7.	No	Not provided – provided in update
8.	No	Not provided – provided in update
9.	Yes	*"To assess internal validity, we will abstract data on the adequacy of the randomization method; the adequacy of allocation concealment; maintenance of blinding; similarity of compared groups at baseline and the author's explanation of the effect of any between-group differences in important confounders or prognostic characteristics"*
10.	Yes	In protocol
11.	Yes	Authors explained meta-analysis
12.	No	Not in this article – in update
13.	No	Not in this article – in update
14.	No	Didn't explain it - *The pooled analysis for risperidone had substantial heterogeneity (I^2 = 74.6%).*
15.	Yes	Publication bias was investigated
16.	Yes	Conflicts of interests reported

Watt et al. Safety of pharmacologic interventions for neuropsychiatric symptoms in dementia: a systematic review and network meta-analysis. BMC Geriatr 2020		
Item	DG answer	Comment/Examples:
1.	Yes	**Population**: PLWD residing in the community or an institutionalized setting. **Intervention:** antipsychotics, antidepressants, sedative/hypnotics, mood stabilizers, anticonvulsants, stimulants, cholinesterase inhibitors, and N-methyl-D-aspartate (NMDA) receptor antagonists. **Comparison:** usual care or placebo, or another medication **Outcomes**: aggression, depressive symptoms, NPI-total score, risk of fracture, mortality, falls, stroke, quality of life, adverse events
2.	Yes	Protocol registered and all review methods reported "*Our protocol was registered (Prospero: CRD42017050130) and published"*

3.	Yes	*We included RCTs and non-randomized studies (NRSs) of pharmacologic interventions used to treat neuropsychiatric symptoms in persons with any type of dementia*
4.	Yes	Comprehensive search strategy
5.	Yes	*"Pairs of reviewers (JAW, ZG, VN, PAK, MG, and YT) independently screened all citations and full-text articles to establish eligibility for inclusion, abstracted data from included full-text articles, and appraised each study for risk of bias."*
6.	Yes	As above
7.	No	Excluded studies not included or listed – explained of PRISMA only
8.	Yes	Supplementary info with characteristics
9.	Yes	Cochrane risk of bias tool used
10.	Yes	Study sponsorship organisation reported
11.	Yes	*"We conducted a Bayesian random-effects pairwise meta-analysis where there was more than one study per treatment comparison. We used random-effects models because we anticipated between-study heterogeneity. We assumed a single within-network between-study variance in each NMA model because all treatments were used in a population of persons living with dementia."*
12.	Yes	*"We also conducted sensitivity analyses by removing studies at high or unclear risk of bias based on the two components of the risk of bias assessment that were the greatest threat to the validity of study findings"*
13.	Yes	Discussed possible effect
14.	Yes	*"We conducted a sensitivity analysis using a weakly informative prior for the between-study heterogeneity ($\tau \sim N(0,1), \tau > 0$) in primary analyses"*
15.	Yes	*"We assessed for publication bias by visually inspecting comparison-adjusted funnel plots"*
16.	Yes	Interests declared

Hsu et al. Antipsychotics and the Risk of Cerebrovascular Accident: A Systematic Review and Meta-Analysis of Observational Studies. J Am Med Dir Assoc. 2017		
Item	DG answer	Comment/Examples:
1.	Yes	**Population:** adults **Intervention:** antipsychotic use **Comparison:** **Primary Outcomes:** CV events **Secondary Outcomes:**
2.	Partial yes	No protocol ROB done using NOS
3.		No explanation
4.	Yes	Comprehensive search strategy
5.	Yes	*Two investigators (W. H., C. L.) independently examined all titles and abstracts and obtained full texts of potentially relevant articles*
6.	Yes?	See above – unsure about data extraction
7.	Yes	Reported in PRISMA diagram
8.	Yes	Table of characteristics
9.	Yes	Used NOS
10.	No	Not stated
11.	Yes	*All meta-analyses were performed using Stata statistical software v 12 (StataCorp, College Station, TX).*
12.	YES	Only included studies that scored high
13.	Yes	Only included studies that scored high
14.	Yes	Funnel plots done – explained
15.	Yes	*Publication bias was assessed using the Begg adjusted rank correlation test and the Egger regression asymmetry test.*
16.	Yes	Declared no conflict of interest

Schneider et al. Risk of death with atypical antipsychotic drug treatment for dementia: meta-analysis of randomised placebo-controlled trials. JAMA 2005

Item	DG answer	Comment/Examples:
1.	Yes	**Population:** people with dementia **Intervention:** atypical antipsychotic (*aripiprazole*, *clozapine*, *olanzapine*, *quetiapine*, *risperidone*, and *ziprasidone)* **Comparison:** placebo **Primary Outcomes:** mortality **Secondary Outcomes:**
2.	No	No review questions or risk of bias assessment mentioned
3.	Yes	Reason for inclusion/exclusion given *"Trials were included in the study analyses if they met the following criteria: parallel group, double-blinded, placebo-controlled with random assignment to an orally administered antipsychotic or placebo; patients had Alzheimer disease, vascular dementia, mixed dementia, or a primary dementia; and numbers of patients randomized, dropouts, and deaths were obtainable."*
4.	Yes	Searched two databases and multiple other sources
5.	Maybe	"*Data were abstracted by one investigator (K.S.D.) and checked by another investigator (P.I.). Any discrepant data were rereviewed by the investigators to ensure that accurate data were obtained"*
6.	No	See above
7.	No	No excluded list provided
8.	No	Results from studies table included but does not contain characteristics of studies
9.	No	no risk of bias assessment done
10.	No	Didn't report on this
11.	Yes	The authors justified combining the data in a meta-analysis AND they used an appropriate weighted technique to combine study results and adjusted for heterogeneity if present
12.	No	No ROB mentioned
13.	No	No ROB
14.	Yes	*"There was no significant heterogeneity among the outcomes (for OR: $\chi^2_{15} = 8.45$, P = .90, and for risk difference: $\chi^2_{15} = 13.63$, P = .55; $I^2 = 0\%$ for both analyses"*
15.	Yes	*"A funnel plot in which sample size was plotted against the log OR of the outcome was used to evaluate potential retrieval bias and to compare the published trials with the nonpublished trials."*
16.	No	No conflicts reported on

Jackson et al. Quantifying the role of adverse events in the mortality difference between first and second-generation antipsychotics in older adults: systematic review and meta-synthesis. PLoS One 2014		
Item	DG answer	Comment/Examples:
1.	Yes	**Population:** elderly (over 65yo) **Intervention:** antipsychotic medication **Comparison:** compared FGAs to SGAs, or both to a non-user group **Primary Outcomes:** mortality, adverse events **Secondary Outcomes:**
2.	Partial yes	No registered protocol
3.	Yes	Rationale provided for included epidemiological studies
4.	Partial yes	Comprehensive search strategy using PubMed and Science Citation Index. Did not include: searched the reference

		lists/bibliographies of included studies, trial/study registries, included/consulted content experts in the field, where relevant, grey literature
5.	N/A	No information given – says "we"
6.	N/A	No information given – says "we"
7.	Yes	Included list and justification in a table
8.	Yes	Supplementary information provided of details of included studies
9.	Yes	Bias analysis carried out for confounding with multiple analysis carried out – provided in supplementary information *"We further improved upon these reviews by only summarizing studies that adjusted for measured confounders, employed a new user design, assessed covariates prior to antipsychotic initiation (or treatment change), and avoided selection bias and immortal person-time bias"*
10.	Yes	"Included as part of manuscript submission process"
11.	Yes	For NSRI all appropriate methods were used
12.	Yes	authors performed analyses to investigate possible impact of RoB on summary estimates of effect
13.	Yes	NRSI were included the review provided a discussion of the likely impact of RoB on the results
14.	No	*"The model used to estimate the proportion of the mortality difference mediated by medical events would be subject to any bias from unmeasured or residual confounding in the individual studies. Even in the absence of such bias, the model did not account for population heterogeneity between the studies reporting rates of medical events among antipsychotic users and the studies reporting mortality rates"*
15.	No	No reporting on publication bias
16.	Yes	Declared sources of funding and conflicts of interest

Dudas et al. Antidepressants for treating depression in dementia. Cochrane database of Systematic Reviews 2018		
Item	DG answer	Comment/Examples:
1.	Yes	**Population:** PLWD **Intervention:** antidepressant **Comparison:** placebo **Primary Outcomes:** Effect on depression **Secondary Outcomes:** quality of life, adverse events
2.	Yes	Included all – protocol not registered, but this is an update of a previous published SR
3.	Yes	*"We considered all identified relevant double-blind, randomised, placebo-controlled trials of longer than four weeks' duration"*
4.	Yes	Multiple databases searched and: *"We consulted a number of experts in old age psychiatry. We also asked the medical information departments of major pharmaceutical companies to search databases and their records for trials involving their products. In addition, we searched reference lists of retrieved studies and review articles."*
5.	Yes	*"Two review authors (first edition: JB and JSB, current revision: RD and TD) then independently selected the trials for inclusion in the review from the culled citation list."*
6.	Yes	*"data were independently extracted by two review authors"*
7.	Yes	List of excluded studies included
8.	Yes	Characteristics of studies included in detail
9.	Yes	Cochrane risk of bias tool used
10.	Yes	Funding sources reported where found
11.	Yes	*"We pooled data from different trials if we considered that the trials were sufficiently similar and it was clinically meaningful to do so. In our primary analyses, we pooled trials of all dementia subtypes and all types of antidepressants. We also performed a separate analysis of antidepressant efficacy at six to nine months.*

		For dichotomous efficacy outcomes, we used the Mantel-Haenszel method, as the study sizes were small. For our tolerability outcomes, we used the Peto odds ratio method, as for these outcomes we had larger samples, the intervention effects were relatively small, and the events were not particularly common. If a Chi^2 test and I^2 indicated little heterogeneity, we used a fixed-effect model for meta-analysis. If there was evidence of heterogeneity of the treatment effect between trials, we either pooled only homogeneous results, or used a random-effects model (in which case the confidence intervals (Cis) would be broader than those of a fixed-effect model). *When combining data provided as median and 95% confidence interval, we used the generic inverse variance method. We used standard error and median difference."*
12.	Yes	Explained effects of possible bias
13.	Yes	Discussion of risk of bias
14.	Yes	*"There was no important heterogeneity in our meta-analysis"*
15.	Yes	Publication bias investigated *"If we had been able to include more than 10 studies in any meta-analysis, then we would have performed a test for funnel plot asymmetry, looking for small study effects which might indicate publication bias."*
16.	Yes	Declared no known conflicts of interest

Ruthirakuhan et al. Pharmacological interventions for apathy in Alzheimer's disease. Cochrane Database of Systematic Reviews 2018		
Item	DG answer	Comment/Examples:
1.	Yes	**Population:** PLWD with apathy **Intervention:** antidepressants 1. CNS stimulants. 2. Antidepressants. 3. Atypical antipsychotics. 4. Apomorphine. 5. Amantadine. 6. Cholinesterase inhibitors. 7. DA agonists **Comparison:** placebo **Primary Outcomes:** Apathy, adverse events **Secondary Outcomes:** NPS other than apathy
2.	Yes	Protocol registered and details provided on plan
3.	Yes	Inclusion of RCT only *"We were only interested in trials in which it was decided randomly whether the people taking part got the drug of interest or the placebo; this was to make sure that the comparison was as fair as possible."*
4.	Partly Yes	Comprehensive search strategy but only performed electronic searches - No information on grey literature or consulting experts
5.	Yes	*"Three review authors independently screened the citations identified from the literature search by title and abstract."*
6.	Yes	*"Three review authors independently extracted the data using a data extraction"*
7.	Yes	List provided and explained as "*Forty-one studies which investigated apathy as a secondary outcome measure did not publish or provide upon request sufficient data on apathy; we therefore excluded them from this review."*
8.	Yes	Characteristics table
9.	Yes	Cochrane risk of bias tool used
10.	Yes	Funding information reported when found
11.	Yes	*"We used a fixed-effect model for analyses with sufficient homogeneity. If there was significant heterogeneity, we used a*

		random-effects model. If possible, we conducted analyses in accordance with the principles of ITT."
12.	Yes	Sensitivity analysis carried out: "*In order to address the robustness of our results to potential risks of bias, we repeated the previous analyses, excluding studies at high risk of bias. We identified issues suitable for sensitivity analysis during the review process."*
13.	Yes	RoB for each study completed
14.	Yes	Heterogeneity analysed and discussed
15.	Yes	Publication bias investigated and discussed
16.	Yes	Conflicts of interest declared

Glass et al. Sedative hypnotics in older people with insomnia: meta-analysis of risks and benefits. BMJ 2005		
Item	DG answer	Comment/Examples:
1.	Yes	**Population:** adults over 60yo ith insomnia and otherwise free of psychiatric or psychological disorders. **Intervention:** hypnotic medication **Comparison:** placebo or another active comparator **Primary Outcomes:** sleep quality, adverse events **Secondary Outcomes:**
2.	Yes	Plan included and protocol published
3.	Yes	Inclusion criteria included for RCTs
4.	Yes	Comprehensive search conducted
5.	Yes	Two researchers agreed on studies included
6.	Yes	*"Three investigators rated study quality using Jadad criteria, of whom two were blinded with respect to authors, author affiliation, date, and source of publication"*
7.	No	Did not provide a full list of studies excluded
8.	Partial Yes	Did not provide descriptions in detail or follow up
9.	Partial Yes	Used jadad scale – accounts for randomisation and blinding
10.	No	Funding not reported that it was accounted for
11.	Yes	Used an appropriate weighted technique: Effect sizes calculated and odds ratios used for adverse events
12.	Yes	Performed analysis on subgroups *"The equation for Cohen's d was used to estimate effect size: M1-M2/δ (where M1 = mean sleep quality score for the treatment group, M2 = mean sleep quality score for the control group, and δ = pooled standard deviations from either control or treatment or both groups)."*
13.	Yes	Provided discussion: *"Furthermore, although studies were double blind, the psychotropic effects of sedative hypnotics may be cues that compromise blinding, which may in turn affect subjective reports."*
14.	Yes	No significant heterogeneity, and where there was it was discussed *"The small effects of morning after impairment that we found may be due to the heterogeneous half lives and doses of the drugs tested, as well as the variable times of testing after dosing."*
15.	Yes	Funnel plots conducted for publication bias and discussed
16.	Yes	Reported no conflicts of interest

Tessa et al. The Mortality Risk of Conventional Antipsychotics in Elderly Patients: A Systematic Review and Meta-analysis of Randomised Placebo-Controlled Trials. Journal of the American Medical Directors Association 2015		
Item	DG answer	Comment/Examples:
1.	Yes	**Population:** elderly **Intervention:** conventional antipsychotics **Comparison:** **Primary Outcomes:** Primary outcome measure was the number of participants who died between the start and the end of the study.

		Deaths of participants after the end of the study were excluded from the analyses.
2.	Partial yes	No registered protocol
3.	Yes	Explanation of RCT inclusion
4.	Yes	Comprehensive search strategy
5.	Yes	2 people searched
6.	Yes	2 people extracted data
7.	Yes	Characteristics of excluded studies in prisma diagram
8.	No	Not given PICO study characteristics of included studies
9.	Yes	Cochrane Collaboration risk of bias assessment tool used
10.	Yes	Tool covered: *absence of other potential sources of bias such as commercial funding.*
11.	Yes	Used revman
12.	Yes	Performed sensitivity analysis of studies with low RoB to assess effect
13.	Yes	review provided a discussion of the likely impact of RoB on the results
14.	Yes	*"Heterogeneity of the included trials in these analyses was low (I2 = 0%). Apart from one of the smaller trials, which had a relatively high rate of deaths in the placebo group"*
15.	Yes	Funnel plots included
16.	Yes	*The authors declare no conflicts of interest.*

Lonergan et al. Haloperidol for agitation in dementia. Cochrane Database Syst Rev. 2002		
Item	DG answer	Comment/Examples:
1.	Yes	**Population:** dementia **Intervention:** haloperidol **Comparison:** **Primary Outcomes:** • *To determine the effect of haloperidol on agitation in demented patients* • *To measure the frequency of adverse effects among patients treated with haloperidol* • *To examine drop-out rates among patients treated with haloperidol* • *To study the effect of haloperidol on caregiver burden of families supporting patients with agitated dementia* • *To measure the effect of haloperidol on functional status of patients with agitated dementia*
2.	Partial Yes	No protocol registered but included: • review question(s) • a search strategy • inclusion/exclusion criteria • a risk of bias assessment
3.	Yes	Inclusion/exclusion criteria explained
4.	Yes	Comprehensive
5.	Yes	Searching and screening of the results were performed independently by two reviewers
6.	Yes	*The reviewers' selection of trials was compared and the final list of studies was reached by consensus between the reviewers or adjudicated by a third reviewer*
7.	Yes	Table provided
8.	Yes	Characteristics of included studies table provided
9.	Yes	*The Cochrane approach to assessing adequacy of allocation concealment was used.*
10.	No	Funding not mentioned in text
11.	N/A	No meta-analysis
12.	N/A	No meta-analysis
13.	Yes	ROB considered

14.	Yes	*The major limitation was the inapplicability of meta-analysis to the included studies owing to heterogeneity in the degree of dementia of the study subjects, the outcome measures used, the measures of agitation, and in the dosage and duration of haloperidol treatment.*
15.	No	Not mentioned in text
16.	Yes	"no known declarations of interest"

Donnelly et al. Benzodiazepines, Z-drugs and the risk of hip fracture: A systematic review and meta-analysis. PLoS One 2017		
Item	DG answer	Comment/Examples:
1.	Yes	**Population:** aged at least 50yo **Intervention:** benzodiazepines and z drugs **Comparison:** **Primary Outcomes:** hip fractures **Secondary Outcomes:**
2.	Yes	Protocol developed prior and plan for carrying out data synthesis, and heterogeneity
3.	Yes	Explanation of including RCT and NSRI
4.	Partially yes	Searched OVID and SCOPUS, no review of extra literature mentioned
5.	Yes	*"Searches were independently carried out by two reviewers (KD, BC), and disagreements were resolved by discussion"*
6.	Yes	"*Data was separately extracted by two reviewers (KD, BC) and discrepancies were resolved following discussion."*
7.	No	List of excluded studies not provided
8.	Partial Yes	Did not report timeframe for follow up
9.	Yes	*"Quality of individual studies will be assessed using relevant Newcastle-Ottawa Scale and then the overall quality will be rated good, fair or poor according to three-grade system."* *"Studies were compared for differences in the context of their setting including: of location, design, fracture type, mean age, sample size, length of drug exposure and adjustment for confounders with particular attention to dose."*
10.	No	Not reported that they looked for this
11.	Yes	*"Only clinical similar studies with the same outcome in the same context will be considered for pooling into a meta-analysis. Pooling will apply a random effect model and present a relative risk summary with 95% CI and associated p-value. Any heterogeneity found will be explored"*
12.	Yes	Four studies were excluded on the basis of quality
13.	Yes	Only included low risk of bias studies
14.	Yes	*"The following subgroup analyses were was to explore the heterogeneity and found to explain the heterogeneity: duration of medication; case mix of patients (insomniac-only studies or not); and the type of study design (population based or non-population based studies)."*
15.	Yes	Publication bias investigated
16.	Yes	reported no competing interests

Van Leeuwen et al. Withdrawal versus continuation of long-term antipsychotic drug use for behavioural and psychological symptoms in older people with dementia. Cochrane Database of Systematic Reviews 2018		
Item	DG answer	Comment/Examples:
1.	Yes	**Population:** older people (65 and over) with dementia who had been taking an antipsychotic drug for at least 3 months **Intervention:** discontinuation of long-term antipsychotic drug use **Comparison:** continuation of long-term antipsychotic drug use **Primary Outcomes:**

		Success of withdrawal from antipsychotics, Behavioural and psychological symptoms, Neuropsychiatric Questionnaire score (NPI-Q), Presence or absence of withdrawal symptoms, Adverse events attributable to antipsychotics **Secondary Outcomes:** Cognitive function; Quality of life of participants, carers and family; Time, in days, until prescription of any psychotropic or any antipsychotic agent; Use of physical restraint; Mortality; Other secondary outcomes reported in the primary papers (e.g. global functioning, sleep, clinical global impression)
2.	Yes	Protocol published in 2009 – this is an update to the 2013 SR https://doi.org/10.1002/14651858.CD007726
3.	Yes	MS – no explanation, but Cochrane reviews tend to only use RCTs Included randomised controlled trials. Withdrawal trials that were not placebo-controlled were included only if the outcome assessors were blinded to treatment allocation. No language restrictions were applied.
4.	Yes	Searched the Specialized Register of the Cochrane Dementia and Cognitive Improvement Group (ALOIS), the Cochrane Library, MEDLINE, Embase, PsycINFO, CINAHL, LILACS, clinical trials registries and grey literature sources up to 11 January 2018.
5.	Yes	Two review authors (EVL, MP) independently screened study titles and abstracts retrieved from the search for their relevance.
6.	Yes	Three review authors (TD, MA, EVL) independently extracted data from included studies using a predefined data extraction form. Differences between authors were resolved by discussion and by consulting the review authors (MVD, TC).
7.	Yes	Characteristics of studies section provided
8.	Yes	Characteristics of studies section provided: Methods, participants, Interventions, Outcomes, Setting, Notes (included follow up times, conflicts of interest), Risk of bias.
9.	Yes	Three review authors (TD, EVL, MVD) independently assessed each included study using the Cochrane's tool for assessing risk of bias. They assessed: • random sequence generation • allocation concealment • blinding of participants and personnel • blinding of outcome assessors • incomplete outcome data • dropout/selective outcome reporting; and • other potential sources of bias.
10.	Yes	Included in notes section of each study summary
11.	Yes	Meta-analysis with 2 studies performed (Ballard 2004 and 2008)– forest plot If there was no obvious clinical heterogeneity they used statistical tests such as the Cochran Chi² (Q) test and the I² statistic to determine the presence and level of statistical heterogeneity for each outcome.
12.	Yes	Both studies had a low risk of bias
13.	Yes	"Most studies were assessed at low or unclear risk of bias. Only Ballard 2008 was assessed at low risk of bias for all domains. Bergh 2011 was judged to be at high risk of bias in two domains. Cohen-Mansfield 1999 and van Reekum 2002 were each assessed at high risk of bias in one domain. The most common unclear risk of bias domains were selection bias, detection bias, attrition bias and reporting bias." Example: Outcome 4: Adverse events "Overall, we considered the quality of evidence for this outcome to be low, downgraded one level for indirectness because only a selection of adverse events was systematically assessed and one level for risk of bias because there was a high dropout in two studies (Ballard 2008; Devanand

		2012) and risk of reporting bias (no data were provided to support the authors' conclusions in two studies)."
14.	Yes	Examples: Primary outcome 1: success of withdrawal – "However, we could not pool data because the studies were too heterogeneous clinically and there were considerable discrepancies in the way the success of antipsychotic withdrawal was measured" Outcome 2: Behavioural and psychological symptoms – "We could not pool data from five studies because they were clinically too heterogeneous (different outcomes, different outcome scales, different time of follow-up) or reported insufficient data. However, results from these five studies (254 participants) also suggested that discontinuation may make little or no difference to NPS"
15.	No	Assessed likelihood but did not provide any statistical justification - "We conducted a comprehensive search for published and unpublished studies that would have reduced the risk of publication bias. Funnel plots could not be constructed because we included only 10 studies."
16.	Yes	All reported no conflict of interest

Appendix 3 – Search Strategy

Benefits and Harms of Antipsychotics

In people with dementia and changed behaviours, what are the risks and benefits of antipsychotic medication use compared to not using antipsychotics?
Should people with dementia and changed behaviours be treated with SGAs compared to FGAs?

Benefits and Harms of Antipsychotics - Medline

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. exp Antipsychotic Agents/
20. antipsychotic*.mp.
21. amisulpride.mp.
22. aripiprazole.mp.
23. asenapine.mp.
24. brexpiprazole.mp.
25. clozapine.mp.
26. lurasidone.mp.
27. olanzapine.mp.
28. paliperidone.mp.
29. quetiapine.mp.
30. risperidone.mp.
31. ziprasidone.mp.
32. chlorpromazine.mp.
33. droperidol.mp.
34. flupentixol.mp.
35. haloperidol.mp.
36. periciazine.mp.
37. zuclopenthixol.mp.
38. atypical antipsychotic*.mp.
39. second generation antipsychotic*.mp.
40. second generation antipsychotic*.mp.
41. typical antipsychotic*.mp.
42. first generation antipsychotic*.mp.
43. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42
44. exp Behavioral Symptoms/
45. BPSD.ti,ab.
46. (behavio?ral and psychological symptom*).ti,ab.
47. non-cognitive symptom*.ti,ab.
48. aber?ant motor behavio?r.ti,ab.
49. agitat*.ti,ab.
50. aggress*.ti,ab.
51. delusion*.ti,ab.
52. depress*.ti,ab.
53. disruptive.ti,ab.
54. euphoria.ti,ab.
55. hallucination*.ti,ab.
56. irritabil*.ti,ab.
57. labil*.ti,ab.
58. mood.ti,ab.
59. defiant.ti,ab.

60. psychosis.ti,ab.
61. restlessness.ti,ab.
62. sociopathy.ti,ab.
63. sleep.ti,ab.
64. verbal hostility.ti,ab.
65. violence.ti,ab.
66. wandering.ti,ab.
67. hoarding.ti,ab.
68. screaming.ti,ab.
69. vocali?ation.ti,ab.
70. disinhibition.ti,ab.
71. sundown*.ti,ab.
72. responsive behavio?r*.ti,ab.
73. anxiety.ti,ab.
74. apathy.ti,ab.
75. neuropsychiatric symptom*.ti,ab.
76. Mortality/
77. Caregivers/
78. "Quality of Life"/
79. Patient Satisfaction/
80. death.ti,ab.
81. Mortality.ti,ab.
82. side effect*.ti,ab.
83. adverse effect*.ab,ti.
84. adverse event*.ti,ab.
85. harm*.ab,ti.
86. safety.ab,ti.
87. Caregiv* burden.ti,ab.
88. carer* burden.ti,ab.
89. Quality of Life.ti,ab.
90. dying.ti,ab.
91. undesirable effects.ti,ab.
92. harmful effects.ti,ab.
93. adverse drug reaction*.ti,ab.
94. serious adverse event*.ti,ab.
95. "health resource use".ti,ab.
96. "resident satisfaction".ti,ab.
97. Health Resources/
98. 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97
99. (systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
100. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
101. "review* of reviews".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
102. meta-analy*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
103. metaanaly*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
104. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
105. "research evidence".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
106. metasynthe*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
107. exp Review Literature as Topic/
108. exp Review/
109. Meta-Analysis as Topic/
110. Meta-Analysis/
111. "systematic review"/

112. 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111
113. "randomized controlled trial".pt.
114. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
115. (retraction of publication or retracted publication).pt.
116. 113 or 114 or 115
117. (animals not humans).sh.
118. ((comment or editorial or meta-analysis or practice-guideline or review or letter or journal correspondence) not "randomized controlled trial").pt.
119. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not "randomized controlled trial".pt.
120. 116 not (117 or 118 or 119)
121. 112 or 120
122. 18 and 43 and 98 and 121
123. limit 122 to (english language and yr="2014 -Current")

Benefits and Harms of Antipsychotics - EMBASE

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. exp neuroleptic agent/
20. exp atypical antipsychotic agent/
21. antipsychotic*.mp.
22. amisulpride.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
23. aripiprazole.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
24. asenapine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
25. brexpiprazole.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
26. clozapine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
27. lurasidone.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
28. olanzapine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
29. paliperidone.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
30. quetiapine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
31. risperidone.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
32. ziprasidone.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
33. "atypical antipsychotic*".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
34. "second generation antipsychotic*".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
35. "typical antipsychotic*".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
36. "first generation antipsychotic*".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]

37. chlorpromazine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
38. droperidol.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
39. flupentixol.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
40. haloperidol.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
41. periciazine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
42. zuclopenthixol.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
43. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42
44. exp Behavioral Symptoms/
45. BPSD.ti,ab.
46. (behavio?ral and psychological symptom*).ti,ab.
47. non-cognitive symptom*.ti,ab.
48. ab?er?ant motor behaviour.ti,ab.
49. agitat*.ti,ab.
50. aggress*.ti,ab.
51. delusion*.ti,ab.
52. disruptive.ti,ab.
53. euphoria.ti,ab.
54. hallucination*.ti,ab.
55. irritabil*.ti,ab.
56. labil*.ti,ab.
57. mood.ti,ab.
58. defiant.ti,ab.
59. psychosis.ti,ab.
60. restlessness.ti,ab.
61. sociopathy.ti,ab.
62. sleep.ti,ab.
63. verbal hostility.ti,ab.
64. violence.ti,ab.
65. wandering.ti,ab.
66. hoarding.ti,ab.
67. screaming.ti,ab.
68. vocali?ation.ti,ab.
69. disinhibition.ti,ab.
70. sundown*.ti,ab.
71. responsive behavio?r*.ti,ab.
72. anxiety.ti,ab.
73. apathy.ti,ab.
74. Mortality/
75. Caregivers/
76. "Quality of Life"/
77. Patient Satisfaction/
78. resident satisfaction.ti,ab.
79. "health resource use".ti,ab.
80. Mortality.ti,ab.
81. side effect*.ti,ab.
82. adverse effect*.ab,ti.
83. adverse event*.ti,ab.
84. harm*.ab,ti.
85. safety.ab,ti.
86. Caregiv* burden.ti,ab.
87. carer* burden.ti,ab.
88. Morbidit*.ti,ab.
89. Quality of Life.ti,ab.
90. dying.ti,ab.
91. undesirable effects.ti,ab.
92. harmful effects.ti,ab.
93. adverse drug reaction*.ti,ab.
94. serious adverse event*.ti,ab.
95. adverse drug reaction/ or adverse event/
96. changed behavio?r*.ti,ab.
97. 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96
98. 18 and 43 and 97

99. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
100. "review* of reviews".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
101. meta-analy*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
102. metaanaly*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
103. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
104. "research evidence".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
105. metasynthe*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
106. meta-synthe*.tw.
107. systematic review/
108. "systematic review (topic)"/
109. meta analysis/
110. "meta analysis (topic)"/
111. 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110
112. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
113. RETRACTED ARTICLE/
114. 112 or 113
115. (animal$ not human$).sh,hw.
116. (book or conference paper or editorial or letter or review).pt. not exp randomized controlled trial/
117. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not exp randomized controlled trial/
118. 114 not (115 or 116 or 117)
119. 111 or 118
120. 98 and 119
121. limit 120 to (english language and yr="2014 -Current")

Benefits and Harms of Antipsychotics - PSYCHINFO

1. exp Dementia/
2. dement*.mp.
3. alzheimer*.mp.
4. (lewy* adj2 bod*).mp.
5. (chronic adj2 cerebrovascular).mp.
6. ("organic brain disease" or "organic brain syndrome").mp.
7. ("normal pressure hydrocephalus" and "shunt*").mp.
8. "benign senescent forgetfulness".mp.
9. (cerebr* adj2 deteriorat*).mp.
10. (cerebral* adj2 insufficient*).mp.
11. (pick* adj2 disease).mp.
12. (creutzfeldt or jcd or cjd).mp.
13. huntington*.mp.
14. binswanger*.mp.
15. korsako*.mp.
16. exp Wernicke's Syndrome/
17. exp Huntingtons Disease/
18. exp Cognitive Impairment/
19. exp Kluver Bucy Syndrome/
20. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. exp Neuroleptic Drugs/
22. antipsychotic*.mp.
23. amisulpride.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
24. aripiprazole.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
25. asenapine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
26. brexpiprazole.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
27. clozapine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
28. lurasidone.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]

29. olanzapine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
30. paliperidone.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
31. quetiapine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
32. risperidone.mp.
33. ziprasidone.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
34. atypical.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
35. second generation.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
36. typical.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
37. first generation.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
38. chlorpromazine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
39. droperidol.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
40. flupentixol.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
41. haloperidol.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
42. periciazine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
43. zuclopenthixol.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
44. 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43
45. Behavior Problems/
46. Aggressive Behavior/
47. Psychiatric Symptoms/
48. Mental Disorders/
49. Sleep Wake Disorders/
50. Wandering Behavior/
51. Antisocial Behavior/
52. BPSD.ti,ab.
53. (behavio?ral and psychological symptom*).ti,ab.
54. non-cognitive symptom*.ti,ab.
55. aber?ant motor behavio?r.ti,ab.
56. agitat*.ti,ab.
57. delusion*.ti,ab.
58. aggress*.ti,ab.
59. depress*.ti,ab.
60. disruptive.ti,ab.
61. euphoria.ti,ab.
62. hallucination*.ti,ab.
63. irritabil*.ti,ab.
64. labil*.ti,ab.
65. mood.ti,ab.
66. defiant.ti,ab.
67. psychosis.ti,ab.
68. restlessness.ti,ab.
69. sociopathy.ti,ab.
70. sleep.ti,ab.
71. verbal hostility.ti,ab.
72. violence.ti,ab.
73. wandering.ti,ab.
74. hoarding.ti,ab.
75. screaming.ti,ab.
76. vocali?ation.ti,ab.
77. disinhibition.ti,ab.
78. sundown*.ti,ab.
79. responsive behavio?r*.ti,ab.
80. anxiety.ti,ab.
81. apathy.ti,ab.
82. neuropsychiatric symptoms.ti,ab.
83. changed behaviour*.ti,ab.
84. 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83

85.	Mortality/
86.	Caregivers/
87.	"Quality of Life"/
88.	Patient Satisfaction/
89.	Mortality.ti,ab.
90.	side effect*.ti,ab.
91.	adverse effect*.ti,ab.
92.	adverse event*.ti,ab.
93.	harm*.ti,ab.
94.	safety.ti,ab.
95.	Caregiv* burden.ti,ab.
96.	carer* burden.ti,ab.
97.	Morbidit*.ti,ab.
98.	Quality of Life.ti,ab.
99.	dying.ti,ab.
100.	undesirable effects.ti,ab.
101.	harmful effects.ti,ab.
102.	adverse drug reaction*.ti,ab.
103.	serious adverse event*.ti,ab.
104.	"Side Effects (Treatment)"/
105.	"Side Effects (Drug)"/
106.	"health resource use".ti,ab.
107.	resident satisfaction.ti,ab.
108.	85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107
109.	84 or 108
110.	20 and 44 and 109
111.	(systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
112.	((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
113.	"review* of reviews".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
114.	meta-analy*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
115.	metaanaly*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
116.	((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
117.	"research evidence".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
118.	metasynthe*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
119.	exp Review/
120.	Meta-Analysis/
121.	"systematic review"/
122.	double-blind.tw.
123.	randomised.mp.
124.	randomized.tw.
125.	randomly assigned.tw.
126.	122 or 123 or 124 or 125
127.	111 or 112 or 113 or 114 or 115 or 116 or 117 or 118 or 119 or 120 or 121
128.	126 or 127
129.	110 and 128
130.	limit 129 to (english language and yr="2014 -Current")

Benefits and Harms of Antipsychotics - CINHAL

CINHAL – R/B and AP

#	**Query**
S133	S97 AND S132
S132	S108 OR S131
S131	S130 NOT S129
S130	S109 OR S110 OR S111 OR S112 OR S113 OR S114 OR S115 OR S116 OR S117 OR S118 OR S119 OR S120 OR S121 OR S122 OR S123
S129	S127 not S128
S128	MH (human)
S127	S124 OR S125 OR S126
S126	TI (animal model*)
S125	MH (animal studies)
S124	MH animals+
S123	AB (cluster W3 RCT)

S122	MH (crossover design) OR MH (comparative studies)
S121	AB (control W5 group)
S120	PT (randomized controlled trial)
S119	MH (placebos)
S118	MH (sample size) AND AB (assigned OR allocated OR control)
S117	TI (trial)
S116	AB (random*)
S115	TI (randomised OR randomized)
S114	MH cluster sample
S113	MH pretest-posttest design
S112	MH random assignment
S111	MH single-blind studies
S110	MH double-blind studies
S109	MH randomized controlled trials
S108	S98 OR S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107
S107	TX systematic review or meta-analysis
S106	MH systematic review
S105	meta-analysis or systematic review
S104	exp Review Literature as Topic/
S103	TX metasynthe*
S102	TX "research evidence"
S101	TX metaanaly*
S100	TX meta-analy*
S99	"review* of reviews"
S98	TX (systematic or state-of-the-art or scoping or literature or umbrella)
S97	S11 AND S36 AND S96
S96	S71 OR S95
S95	S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79 OR S80 OR S81 OR S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88 OR S89 OR S90 OR S91 OR S92 OR S93 OR S94
S94	MH Mortality
S93	TI Mortality AND AB Mortality
S92	(MH "Adverse Drug Event+")
S91	TI side effect* AND AB side effect*
S90	TI adverse effect* AND AB adverse effect*
S89	TI adverse event* AND AB adverse event*
S88	TI harm* AND AB harm*
S87	TI safety AND AB safety
S86	(MH "Caregiver Burden")
S85	TI Care* Burden AND AB Care* Burden
S84	MH Quality of Life
S83	TI Quality of Life AND AB Quality of Life
S82	MH Patient Satisfaction
S81	TI Patient Satisfaction AND AB Patient Satisfaction
S80	TI "resident satisfaction" AND AB "resident satisfaction"
S79	TI health resource use AND AB health resource use
S78	TI health resource utilization AND AB health resource utilization
S77	MH health resource utilization
S76	TI "serious adverse event" AND AB "serious adverse event"
S75	TI death AND AB death
S74	TI dying AND AB dying
S73	TI undesirable effects AND AB undesirable effects
S72	TI harmful effects AND AB harmful effects
S71	S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70
S70	(MH "Behavioral Symptoms+")
S69	TI (behavio?ral and psychological symptoms of dementia') AND AB ('behavio?ral and psychological symptoms of dementia')
S68	TI neuropsychiatric symptoms AND AB neuropsychiatric symptoms
S67	TI challenging behaviour AND AB challenging behaviour
S66	AB "non-cognitive symptoms" AND TI "non-cognitive symptoms"
S65	TI bpsd AND AB bpsd
S64	TI "aber?ant motor behavio?r" AND AB "aber?ant motor behavio?r"
S63	TI "aberrant motor behaviour" AND AB "aberrant motor behaviour"
S62	TI agitat* AND AB agitat*
S61	TI aggress* AND AB aggress*
S60	TI delusion* AND AB delusion*
S59	TI depress* AND AB depress*
S58	TI disruptive AND AB disruptive
S57	TI euphoria AND AB euphoria
S56	TI hallucination* AND AB hallucination*
S55	TI irritabil* AND AB irritabil*
S54	AB labil* AND TI labil*

S53	TI mood AND AB mood
S52	TI defiant AND AB defiant
S51	TI psychosis AND AB psychosis
S50	TI restlessness AND AB restlessness
S49	TI sociopathy AND AB sociopathy
S48	TI sleep AND AB sleep
S47	TI verbal hostility AND AB verbal hostility
S46	TI violence AND AB violence
S45	TI wandering AND AB wandering
S44	TI hoarding AND AB hoarding
S43	TI screaming AND AB screaming
S42	TI vocali?ation AND AB vocali?ation
S41	TI disinhibition AND AB disinhibition
S40	TI sundown* AND AB sundown*
S39	TI responsive behavio?r* AND AB responsive behavio?r*
S38	TI anxiety AND AB anxiety
S37	TI apathy AND AB apathy
S36	S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35
S35	(MH "Antipsychotic Agents+")
S34	TX zuclopenthixol
S33	TX periciazine
S32	TX haloperidol
S31	TX flupentixol
S30	TX droperidol
S29	TX ziprasidone
S28	TX risperidone
S27	TX quetiapine
S26	TX paliperidone
S25	TX olanzapine
S24	TX lurasidone
S23	TX clozapine
S22	TX brexpiprazole
S21	TX asenapine
S20	TX aripiprazole
S19	TX amisulpride
S18	TX antipsychotic*
S17	antipsychotic agents
S16	TX chlorpromazine
S15	TX atypical antipsychotic*
S14	TX second generation antipsychotic*
S13	TX typical antipsychotic*
S12	TX first generation antipsychotic*
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10
S10	("Dementia")
S9	(MH "Dementia+")
S8	(MH "Dementia, Vascular+")
S7	(MH "Delirium, Dementia, Amnestic, Cognitive Disorders+")
S6	(MH "Dementia, Multi-Infarct")
S5	(MH "Dementia, Presenile+")
S4	(MH "Dementia, Senile+")
S3	("Alzheimer Disease")
S2	(MH "Alzheimer's Disease")
S1	"Lewy Body Disease"

Benefits and Harms of Antipsychotics - CENTRAL

#1	MeSH descriptor: [Dementia] explode all trees
#2	MeSH descriptor: [Wernicke Encephalopathy] this term only
#3	MeSH descriptor: [Neurocognitive Disorders] explode all trees
#4	dement*
#5	alzheimer*
#6	(lewy* adj2 bod*)
#7	(chronic adj2 cerebrovascular)
#8	("organic brain disease" or "organic brain syndrome")
#9	("normal pressure hydrocephalus" and "shunt*")
#10	"benign senescent forgetfulness"
#11	(cerebr* adj2 deteriorat*)
#12	(cerebral* adj2 insufficient*)
#13	(pick* adj2 disease)
#14	(creutzfeldt or jcd or cjd)
#15	huntington*

#16 binswanger*
#17 korsako*
#18 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17

#19 MeSH descriptor: [Antipsychotic Agents] explode all trees
#20 antipsychotic*
#21 amisulpride
#22 aripiprazole
#23 asenapine
#24 brexpiprazole
#25 clozapine
#26 lurasidone
#27 olanzapine
#28 paliperidone
#29 quetiapine
#30 risperidone
#31 ziprasidone
#32 droperidol
#33 flupentixol
#34 haloperidol
#35 periciazine
#36 zuclopenthixol
#37 Atypical antipsychotic*
#38 typical antipsychotic*
#39 second generation antipsychotic*
#40 First generation antipsychotic*
#41 #20 OR #21 Or #22 Or #23 Or #24 Or #25 OR #26 OR #27 or #28 OR #29 OR #30 or #31 OR #32 OR #33 Or #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40
#42 MeSH descriptor: [Behavioral Symptoms] explode all trees
#43 BPSD
#44 behavio?ral and psychological symptom*
#45 non-cognitive symptom*
#46 aber?ant motor behavio?r
#47 agitat*
#48 aggress*
#49 delusion*
#50 depress*
#51 disruptive
#52 euphoria
#53 hallucination*
#54 irritabil*
#55 labil*
#56 mood
#57 defiant
#58 psychosis
#59 restlessness
#60 sociopathy
#61 sleep
#62 verbal hostility
#63 violence
#64 wandering
#65 hoarding
#66 screaming
#67 vocali?ation
#68 disinhibition
#69 sundown*
#70 responsive behavio?r*
#71 anxiety
#72 apathy
#73 neuropsychiatric symptom*
#74 changed behavio?r
#75 MeSH descriptor: [Mortality] explode all trees
#76 MeSH descriptor: [Caregivers] explode all trees9
#77 MeSH descriptor: [Quality of Life] explode all trees
#78 MeSH descriptor: [Patient Satisfaction] explode all trees
#79 death
#80 Mortality
#81 side effect*
#82 MeSH descriptor: [Drug-Related Side Effects and Adverse Reactions] explode all trees
#83 adverse effect*
#84 adverse event*
#85 harm*

#86 safety
#87 Caregiv* burden
#88 carer* burden
#89 Quality of Life
#90 dying
#91 undesirable effects
#92 harmful effects
#93 adverse drug reaction*
#94 serious adverse event*
#95 MeSH descriptor: [Prevalence] this term only
#96 prevalence:ti,ab
#97 #42 Or #43 OR #44 OR #45 OR #46 OR #47 Or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68 or #69 or #70 or #71 or #72 or #73 or #74 or #75 or #76 or #77 or #78 or #79 or #80 or #81 or #82 or #83 or #84 or #85 or #86 or #87 or #88 or #89 or #90 or #91 or #92 or #93 or #94 or #95 or #96
#98 #18 AND #41 AND #97 with Cochrane Library publication date Between Oct 2014 and Nov 2021, in Cochrane Reviews, Cochrane Protocols, Trials, Clinical Answers

Discontinuation of Antipsychotics

For people with dementia who have commenced antipsychotic medication, should medication be discontinued?

Discontinuation of antipsychotics - Medline

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. Deprescriptions/
20. discontinu*.ti,ab.
21. withdraw*.ti,ab.
22. cessat*.ti,ab.
23. taper*.ti,ab.
24. stop*.ti,ab.
25. deprescribing.ti,ab.
26. ceas*.ti,ab.
27. decreas*.ti,ab.
28. deprescrib*.ti,ab.
29. de-prescrib*.ti,ab.
30. eliminat*.ti,ab.
31. substitut*.ti,ab.
32. reduc*.ti,ab.
33. antipsychotic.ti,ab.
34. exp Antipsychotic Agents/
35. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32
36. 33 or 34
37. 35 and 36
38. exp Behavioral Symptoms/
39. BPSD.ti,ab.
40. (behavio?ral and psychological symptom*).ti,ab.
41. non-cognitive symptom*.ti,ab.
42. aber?ant motor behavio?r.ti,ab.
43. agitat*.ti,ab.
44. aggress*.ti,ab.
45. delusion*.ti,ab.
46. depress*.ti,ab.
47. disruptive.ti,ab.

48. euphoria.ti,ab.
49. hallucination*.ti,ab.
50. irritabil*.ti,ab.
51. labil*.ti,ab.
52. mood.ti,ab.
53. defiant.ti,ab.
54. psychosis.ti,ab.
55. restlessness.ti,ab.
56. sociopathy.ti,ab.
57. sleep.ti,ab.
58. verbal hostility.ti,ab.
59. violence.ti,ab.
60. wandering.ti,ab.
61. hoarding.ti,ab.
62. screaming.ti,ab.
63. vocali?ation.ti,ab.
64. disinhibition.ti,ab.
65. sundown*.ti,ab.
66. responsive behavio?r*.ti,ab.
67. anxiety.ti,ab.
68. apathy.ti,ab.
69. neuropsychiatric symptom*.ti,ab.
70. Mortality/
71. Caregivers/
72. "Quality of Life"/
73. Patient Satisfaction/
74. death.ti,ab.
75. Mortality.ti,ab.
76. side effect*.ti,ab.
77. adverse effect*.ab,ti.
78. adverse event*.ti,ab.
79. harm*.ab,ti.
80. safety.ab,ti.
81. Caregiv* burden.ti,ab.
82. carer* burden.ti,ab.
83. Quality of Life.ti,ab.
84. dying.ti,ab.
85. undesirable effects.ti,ab.
86. harmful effects.ti,ab.
87. adverse drug reaction*.ti,ab.
88. serious adverse event*.ti,ab.
89. "health resource use".ti,ab.
90. "resident satisfaction".ti,ab.
91. 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90
92. 18 and 37 and 91
93. (systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
94. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
95. "review* of reviews".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
96. meta-analy*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
97. metaanaly*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
98. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
99. "research evidence".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

100. metasynthe*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
101. exp Review Literature as Topic/
102. exp Review/
103. Meta-Analysis as Topic/
104. Meta-Analysis/
105. "systematic review"/
106. 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105
107. "randomized controlled trial".pt.
108. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
109. (retraction of publication or retracted publication).pt.
110. 107 or 108 or 109
111. (animals not humans).sh.
112. ((comment or editorial or meta-analysis or practice-guideline or review or letter or journal correspondence) not "randomized controlled trial").pt.
113. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not "randomized controlled trial".pt.
114. 110 not (111 or 112 or 113)
115. 106 or 114
116. 92 and 115
117. limit 116 to (english language and yr="2018 -Current")

Discontinuation of antipsychotics- EMBASE

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. exp neuroleptic agent/
20. exp atypical antipsychotic agent/
21. deprescription/
22. discontinu*.ti,ab.
23. withdraw*.ti,ab.
24. cessat*.ti,ab.
25. reduc*.ab,ti.
26. reduct*.ti,ab.
27. taper*.ti,ab.
28. stop*.ti,ab.
29. deprescribing.ti,ab.
30. ceas*.ab,ti.
31. decreas*.ab,ti.
32. deprescrib*.ab,ti.
33. de-prescrib*.ab,ti.
34. deprescription.ab,ti.
35. eliminat*.ab,ti.
36. substitut*.ab,ti.
37. 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36
38. 19 or 20
39. 37 and 38
40. exp Behavioral Symptoms/
41. BPSD.ti,ab.
42. (behavio?ral and psychological symptom*).ti,ab.
43. non-cognitive symptom*.ti,ab.
44. ab?er?ant motor behaviour.ti,ab.
45. agitat*.ti,ab.
46. aggress*.ti,ab.

47. delusion*.ti,ab.
48. disruptive.ti,ab.
49. euphoria.ti,ab.
50. hallucination*.ti,ab.
51. irritabil*.ti,ab.
52. labil*.ti,ab.
53. mood.ti,ab.
54. defiant.ti,ab.
55. psychosis.ti,ab.
56. restlessness.ti,ab.
57. sociopathy.ti,ab.
58. sleep.ti,ab.
59. verbal hostility.ti,ab.
60. violence.ti,ab.
61. wandering.ti,ab.
62. hoarding.ti,ab.
63. screaming.ti,ab.
64. vocali?ation.ti,ab.
65. disinhibition.ti,ab.
66. sundown*.ti,ab.
67. responsive behavio?r*.ti,ab.
68. anxiety.ti,ab.
69. apathy.ti,ab.
70. Mortality/
71. Caregivers/
72. "Quality of Life"/
73. Patient Satisfaction/
74. resident satisfaction.ti,ab.
75. "health resource use".ti,ab.
76. Mortality.ti,ab.
77. side effect*.ti,ab.
78. adverse effect*.ab,ti.
79. adverse event*.ti,ab.
80. harm*.ab,ti.
81. safety.ab,ti.
82. Caregiv* burden.ti,ab.
83. carer* burden.ti,ab.
84. Morbidit*.ti,ab.
85. Quality of Life.ti,ab.
86. dying.ti,ab.
87. undesirable effects.ti,ab.
88. harmful effects.ti,ab.
89. adverse drug reaction*.ti,ab.
90. serious adverse event*.ti,ab.
91. adverse drug reaction/ or adverse event/
92. 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91
93. 18 and 39 and 92
94. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
95. "review* of reviews".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
96. meta-analy*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
97. metaanaly*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
98. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
99. "research evidence".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
100. metasynthe*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
101. meta-synthe*.tw.
102. systematic review/
103. "systematic review (topic)"/
104. meta analysis/
105. "meta analysis (topic)"/
106. 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105
107. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
108. RETRACTED ARTICLE/

109. 107 or 108
110. (animal$ not human$).sh,hw.
111. (book or conference paper or editorial or letter or review).pt. not exp randomized controlled trial/
112. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not exp randomized controlled trial/
113. 109 not (110 or 111 or 112)
114. 106 or 113
115. 93 and 114
116. limit 115 to (english language and yr="2018 -Current")

Discontinuation of antipsychotics - PSYCHINFO

1. exp Dementia/
2. dement*.mp.
3. alzheimer*.mp.
4. (lewy* adj2 bod*).mp.
5. (chronic adj2 cerebrovascular).mp.
6. ("organic brain disease" or "organic brain syndrome").mp.
7. ("normal pressure hydrocephalus" and "shunt*").mp.
8. "benign senescent forgetfulness".mp.
9. (cerebr* adj2 deteriorat*).mp.
10. (cerebral* adj2 insufficient*).mp.
11. (pick* adj2 disease).mp.
12. (creutzfeldt or jcd or cjd).mp.
13. huntington*.mp.
14. binswanger*.mp.
15. korsako*.mp.
16. exp Wernicke's Syndrome/
17. exp Huntingtons Disease/
18. exp Cognitive Impairment/
19. exp Kluver Bucy Syndrome/
20. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. exp Neuroleptic Drugs/
22. discontinu*.ti,ab.
23. withdraw*.ti,ab.
24. cessat*.ti,ab.
25. taper*.ti,ab.
26. stop*.ti,ab.
27. reduc*.ti,ab.
28. deprescribing.ti,ab.
29. ceas*.ti,ab.
30. decreas*.ti,ab.
31. deprescrib*.ti,ab.
32. de-prescrib*.ab,ti.
33. deprescription.ab,ti.
34. eliminat*.ti,ab.
35. substitut*.ti,ab.
36. 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35
37. 21 and 36
38. Behavior Problems/
39. Aggressive Behavior/
40. Psychiatric Symptoms/
41. Mental Disorders/
42. Sleep Wake Disorders/
43. Wandering Behavior/
44. Antisocial Behavior/
45. BPSD.ti,ab.
46. (behavio?ral and psychological symptom*).ti,ab.
47. non-cognitive symptom*.ti,ab.
48. aber?ant motor behavio?r.ti,ab.
49. agitat*.ti,ab.
50. delusion*.ti,ab.
51. aggress*.ti,ab.
52. depress*.ti,ab.
53. disruptive.ti,ab.
54. euphoria.ti,ab.
55. hallucination*.ti,ab.
56. irritabil*.ti,ab.
57. labil*.ti,ab.
58. mood.ti,ab.
59. defiant.ti,ab.
60. psychosis.ti,ab.
61. restlessness.ti,ab.

62. sociopathy.ti,ab.
63. sleep.ti,ab.
64. verbal hostility.ti,ab.
65. violence.ti,ab.
66. wandering.ti,ab.
67. hoarding.ti,ab.
68. screaming.ti,ab.
69. vocali?ation.ti,ab.
70. disinhibition.ti,ab.
71. sundown*.ti,ab.
72. responsive behavio?r*.ti,ab.
73. anxiety.ti,ab.
74. apathy.ti,ab.
75. neuropsychiatric symptoms.ti,ab.
76. Mortality/
77. Caregivers/
78. "Quality of Life"/
79. Patient Satisfaction/
80. Mortality.ti,ab.
81. side effect*.ti,ab.
82. adverse effect*.ti,ab.
83. adverse event*.ti,ab.
84. harm*.ti,ab.
85. safety.ti,ab.
86. Caregiv* burden.ti,ab.
87. carer* burden.ti,ab.
88. Quality of Life.ti,ab.
89. dying.ti,ab.
90. undesirable effects.ti,ab.
91. harmful effects.ti,ab.
92. adverse drug reaction*.ti,ab.
93. serious adverse event*.ti,ab.
94. "Side Effects (Treatment)"/
95. "Side Effects (Drug)"/
96. "health resource use".ti,ab.
97. resident satisfaction.ti,ab.
98. changed behavio?r*.ti,ab.
99. 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98
100. (systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
101. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
102. "review* of reviews".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
103. meta-analy*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
104. metaanaly*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
105. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
106. "research evidence".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
107. metasynthe*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
108. exp Review/
109. Meta-Analysis/
110. "systematic review"/
111. 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110
112. double-blind.tw.
113. randomised.mp.
114. randomized.tw.
115. randomly assigned.tw.
116. 112 or 113 or 114 or 115
117. 111 or 116
118. 20 and 37 and 99 and 117
119. limit 118 to (english language and yr="2018 -Current")

#	Query
S122	S86 AND S121
S121	S97 OR S120
S120	S117 NOT S119
S119	S118 NOT S98
S118	S99 OR S100 OR S101
S117	S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110 OR S111 OR S112 OR S113 OR S114 OR S115 OR S116
S116	MH randomized controlled trials
S115	MH double-blind studies
S114	MH single-blind studies
S113	MH random assignment
S112	MH pretest-posttest design
S111	MH cluster sample
S110	TI (randomised OR randomized)
S109	AB (random*)
S108	TI (trial)
S107	MH (sample size) AND AB (assigned OR allocated OR control)
S106	MH (placebos)
S105	PT (randomized controlled trial)
S104	AB (control W5 group)
S103	MH (crossover design) OR MH (comparative studies)
S102	AB (cluster W3 RCT)
S101	MH animals+
S100	MH (animal studies)
S99	TI (animal model*)
S98	MH (human)
S97	S87 OR S88 OR S89 OR S90 OR S91 OR S92 OR S93 OR S94 OR S95 OR S96
S96	TX systematic review or meta-analysis
S95	MH systematic review
S94	meta-analysis or systematic review
S93	exp Review Literature as Topic/
S92	TX metasynthe*
S91	TX "research evidence"
S90	TX metaanaly*
S89	TX meta-analy*
S88	"review* of reviews"
S87	TX (systematic or state-of-the-art or scoping or literature or umbrella)
S86	S11 AND S27 AND S85
S85	S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79 OR S80 OR S81 OR S82 OR S83 OR S84
S84	MH Mortality
S83	TI Mortality AND AB Mortality
S82	(MH "Adverse Drug Event+")
S81	TI side effect* AND AB side effect*
S80	TI adverse effect* AND AB adverse effect*
S79	TI adverse event* AND AB adverse event*
S78	TI harm* AND AB harm*
S77	TI safety AND AB safety
S76	(MH "Caregiver Burden")
S75	TI Care* Burden AND AB Care* Burden
S74	MH Quality of Life
S73	TI Quality of Life AND AB Quality of Life
S72	MH Patient Satisfaction
S71	TI Patient Satisfaction AND AB Patient Satisfaction
S70	TI "resident satisfaction" AND AB "resident satisfaction"
S69	TI health resource use AND AB health resource use
S68	TI health resource utilization AND AB health resource utilization
S67	MH health resource utilization
S66	TI "serious adverse event" AND AB "serious adverse event"
S65	TI death AND AB death
S64	TI dying AND AB dying
S63	TI undesirable effects AND AB undesirable effects
S62	TI harmful effects AND AB harmful effects
S61	(MH "Behavioral Symptoms+")
S60	TI (behavio?ral and psychological symptoms of dementia') AND AB ('behavio?ral and psychological symptoms of dementia')
S59	TI neuropsychiatric symptoms AND AB neuropsychiatric symptoms
S58	TI challenging behaviour AND AB challenging behaviour

S57	AB "non-cognitive symptoms" AND TI "non-cognitive symptoms"
S56	TI bpsd AND AB bpsd
S55	TI "aber?ant motor behavio?r" AND AB "aber?ant motor behavio?r"
S54	TI "aberrant motor behaviour" AND AB "aberrant motor behaviour"
S53	TI agitat* AND AB agitat*
S52	TI aggress* AND AB aggress*
S51	TI delusion* AND AB delusion*
S50	TI depress* AND AB depress*
S49	TI disruptive AND AB disruptive
S48	TI euphoria AND AB euphoria
S47	TI hallucination* AND AB hallucination*
S46	TI irritabil* AND AB irritabil*
S45	AB labil* AND TI labil*
S44	TI mood AND AB mood
S43	TI defiant AND AB defiant
S42	TI psychosis AND AB psychosis
S41	TI restlessness AND AB restlessness
S40	TI sociopathy AND AB sociopathy
S39	TI sleep AND AB sleep
S38	TI verbal hostility AND AB verbal hostility
S37	TI violence AND AB violence
S36	TI wandering AND AB wandering
S35	TI hoarding AND AB hoarding
S34	TI screaming AND AB screaming
S33	TI vocali?ation AND AB vocali?ation
S32	TI disinhibition AND AB disinhibition
S31	TI sundown* AND AB sundown*
S30	TI responsive behavio?r* AND AB responsive behavio?r*
S29	TI anxiety AND AB anxiety
S28	TI apathy AND AB apathy
S27	S24 AND S26
S26	S23 OR S25
S25	(MH "Antipsychotic Agents+")
S24	S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22
S23	TI antipsychotic* AND AB antipsychotic*
S22	TI eliminat* AND AB eliminat*
S21	TI substitut* AND AB substitut*
S20	TI decreas* AND AB decreas*
S19	TI De-prescri* AND AB De-prescri*
S18	TI Deprescri* AND AB Deprescri*
S17	TI discontinu* AND AB discontinu*
S16	TI withdraw* AND AB withdraw*
S15	TI cessat* AND AB cessat*
S14	TI reduc* AND AB reduc*
S13	TI taper* AND AB taper*
S12	TI stop* AND AB stop*
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10
S10	("Dementia")
S9	(MH "Dementia+")
S8	(MH "Dementia, Vascular+")
S7	(MH "Delirium, Dementia, Amnestic, Cognitive Disorders+")
S6	(MH "Dementia, Multi-Infarct")
S5	(MH "Dementia, Presenile+")
S4	(MH "Dementia, Senile+")
S3	("Alzheimer Disease")
S2	(MH "Alzheimer's Disease")
S1	"Lewy Body Disease"

Discontinuation of antipsychotics - CENTRAL

#1	MeSH descriptor: [Dementia] explode all trees
#2	MeSH descriptor: [Wernicke Encephalopathy] this term only
#3	MeSH descriptor: [Neurocognitive Disorders] explode all trees
#4	dement*
#5	alzheimer*
#6	(lewy* adj2 bod*)
#7	(chronic adj2 cerebrovascular)
#8	("organic brain disease" or "organic brain syndrome")
#9	("normal pressure hydrocephalus" and "shunt*")
#10	"benign senescent forgetfulness"
#11	(cerebr* adj2 deteriorat*)
#12	(cerebral* adj2 insufficient*)

#13 (pick* adj2 disease)
#14 (creutzfeldt or jcd or cjd)
#15 huntington*
#16 binswanger*
#17 korsako*
#18 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17
#42 MeSH descriptor: [Behavioral Symptoms] explode all trees
#43 BPSD
#44 behavio?ral and psychological symptom*
#45 non-cognitive symptom*
#46 aber?ant motor behavio?r
#47 agitat*
#48 aggress*
#49 delusion*
#50 depress*
#51 disruptive
#52 euphoria
#53 hallucination*
#54 irritabil*
#55 labil*
#56 mood
#57 defiant
#58 psychosis
#59 restlessness
#60 sociopathy
#61 sleep
#62 verbal hostility
#63 violence
#64 wandering
#65 hoarding
#66 screaming
#67 vocali?ation
#68 disinhibition
#69 sundown*
#70 responsive behavio?r*
#71 anxiety
#72 apathy
#73 neuropsychiatric symptom*
#74 changed behavio?r
#75 MeSH descriptor: [Mortality] explode all trees
#76 MeSH descriptor: [Caregivers] explode all trees9
#77 MeSH descriptor: [Quality of Life] explode all trees
#78 MeSH descriptor: [Patient Satisfaction] explode all trees
#79 death
#80 Mortality
#81 side effect*
#82 MeSH descriptor: [Drug-Related Side Effects and Adverse Reactions] explode all trees
#83 adverse effect*
#84 adverse event*
#85 harm*
#86 safety
#87 Caregiv* burden
#88 carer* burden
#89 Quality of Life
#90 dying
#91 undesirable effects
#92 harmful effects
#93 adverse drug reaction*
#94 serious adverse event*
#95 MeSH descriptor: [Prevalence] this term only
#96 prevalence:ti,ab
#97 #42 Or #43 OR #44 OR #45 OR #46 OR #47 Or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68 or #69 or #70 or #71 or #72 or #73 or #74 or #75 or #76 or #77 or #78 or #79 or #80 or #81 or #82 or #83 or #84 or #85 or #86 or #87 or #88 or #89 or #90 or #91 or #92 or #93 or #94 or #95 or #96
#99 MeSH descriptor: [Antipsychotic Agents] explode all trees
#101 Deprescriptions
#102 discontinu*
#103 withdraw*
#104 cessat*
#105 reduc*
#106 taper*

#107 stop*
#108 ceas*
#109 decreas*
#110 deprescrib*
#111 de-prescrib*
#112 deprescription
#113 eliminat*
#114 substitut*
#115 #101 or #102 OR #103 or #104 OR #105 OR #106 OR #107 OR #108 OR #109 OR #110 OR #111 OR #112 OR #113 OR #114
#116 #99 AND #115

#118 #18 AND #116 AND #97 with Cochrane Library publication date Between Jan 2018 and Jul 2021, in Cochrane Reviews, Cochrane Protocols, Trials, Clinical Answers

Benefits and Harms of Benzodiazepines

In people with dementia and changed behaviours, what are the risks and benefits of benzodiazepine use compared to not using benzodiazepines?

Benefits and Harms of Benzodiazepines - MEDLINE

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. exp Benzodiazepines/
20. benzodiazepine*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
21. benzo*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
22. alprazolam.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
23. bromazepam.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
24. clobazam.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
25. diazepam.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
26. Clonazepam.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
27. flunitrazepam.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
28. lorazepam.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
29. midazolam.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

30. nitrazepam.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
31. oxazepam.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
32. temazepam.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
33. exp Tranquilizing Agents/
34. tranquilli?er.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
35. anxiolytic.mp.
36. muscle relaxant.mp.
37. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36
38. exp Behavioral Symptoms/
39. BPSD.ti,ab.
40. (behavio?ral and psychological symptom*).ti,ab.
41. non-cognitive symptom*.ti,ab.
42. aber?ant motor behavio?r.ti,ab.
43. agitat*.ti,ab.
44. aggress*.ti,ab.
45. delusion*.ti,ab.
46. depress*.ti,ab.
47. disruptive.ti,ab.
48. euphoria.ti,ab.
49. hallucination*.ti,ab.
50. irritabil*.ti,ab.
51. labil*.ti,ab.
52. mood.ti,ab.
53. defiant.ti,ab.
54. psychosis.ti,ab.
55. restlessness.ti,ab.
56. sociopathy.ti,ab.
57. sleep.ti,ab.
58. verbal hostility.ti,ab.
59. violence.ti,ab.
60. wandering.ti,ab.
61. hoarding.ti,ab.
62. screaming.ti,ab.
63. vocali?ation.ti,ab.
64. disinhibition.ti,ab.
65. sundown*.ti,ab.
66. responsive behavio?r*.ti,ab.
67. anxiety.ti,ab.
68. apathy.ti,ab.
69. neuropsychiatric symptom*.ti,ab.
70. changed behavio?r*.ti,ab.
71. 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70
72. Mortality/
73. Caregivers/
74. "Quality of Life"/
75. Patient Satisfaction/
76. death.ti,ab.
77. Mortality.ti,ab.
78. side effect*.ti,ab.
79. adverse effect*.ab,ti.
80. adverse event*.ti,ab.
81. harm*.ab,ti.
82. safety.ab,ti.
83. Caregiv* burden.ti,ab.
84. carer* burden.ti,ab.
85. Quality of Life.ti,ab.
86. dying.ti,ab.
87. undesirable effects.ti,ab.
88. harmful effects.ti,ab.
89. adverse drug reaction*.ti,ab.
90. serious adverse event*.ti,ab.
91. "health resource use".ti,ab.
92. "resident satisfaction".ti,ab.

93. 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92
94. 18 and 37 and 93
95. (systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
96. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
97. "review* of reviews".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
98. meta-analy*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
99. metaanaly*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
100. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
101. "research evidence".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
102. metasynthe*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
103. exp Review Literature as Topic/
104. exp Review/
105. Meta-Analysis as Topic/
106. Meta-Analysis/
107. "systematic review"/
108. 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107
109. "randomized controlled trial".pt.
110. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
111. (retraction of publication or retracted publication).pt.
112. 109 or 110 or 111
113. (animals not humans).sh.
114. ((comment or editorial or meta-analysis or practice-guideline or review or letter or journal correspondence) not "randomized controlled trial").pt.
115. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not "randomized controlled trial".pt.
116. 112 not (113 or 114 or 115)
117. 108 or 116
118. 94 and 117
119. limit 118 to (english language and yr="2014 -Current")

Benefits and Harms of Benzodiazepines - EMBASE

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. exp benzodiazepine derivative/

20. benzodiazepine*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
21. benzo*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
22. alprazolam.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
23. bromazepam.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
24. clobazam.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
25. diazepam.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
26. clonazepam.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
27. flunitrazepam.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
28. lorazepam.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
29. midazolam.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
30. nitrazepam.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
31. oxazepam.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
32. temazepam.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
33. exp tranquilizer/
34. exp anxiolytic agent/
35. tranquilli?er.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
36. muscle relaxant agent.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
37. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36
38. exp Behavioral Symptoms/
39. BPSD.ti,ab.
40. (behavio?ral and psychological symptom*).ti,ab.
41. non-cognitive symptom*.ti,ab.
42. ab?er?ant motor behaviour.ti,ab.
43. agitat*.ti,ab.
44. aggress*.ti,ab.
45. delusion*.ti,ab.
46. disruptive.ti,ab.
47. euphoria.ti,ab.
48. hallucination*.ti,ab.
49. irritabil*.ti,ab.
50. labil*.ti,ab.
51. mood.ti,ab.
52. defiant.ti,ab.
53. psychosis.ti,ab.
54. restlessness.ti,ab.
55. sociopathy.ti,ab.
56. sleep.ti,ab.
57. verbal hostility.ti,ab.
58. violence.ti,ab.
59. wandering.ti,ab.
60. hoarding.ti,ab.
61. screaming.ti,ab.
62. vocali?ation.ti,ab.
63. disinhibition.ti,ab.
64. sundown*.ti,ab.
65. responsive behavio?r*.ti,ab.
66. anxiety.ti,ab.
67. apathy.ti,ab.
68. changed behavio?r*.ti,ab.
69. Mortality/
70. Caregivers/
71. "Quality of Life"/
72. Patient Satisfaction/
73. resident satisfaction.ti,ab.
74. "health resource use".ti,ab.
75. Mortality.ti,ab.
76. side effect*.ti,ab.

77. adverse effect*.ab,ti.
78. adverse event*.ti,ab.
79. harm*.ab,ti.
80. safety.ab,ti.
81. Caregiv* burden.ti,ab.
82. carer* burden.ti,ab.
83. Quality of Life.ti,ab.
84. dying.ti,ab.
85. undesirable effects.ti,ab.
86. harmful effects.ti,ab.
87. adverse drug reaction*.ti,ab.
88. serious adverse event*.ti,ab.
89. adverse drug reaction/ or adverse event/
90. 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89
91. 18 and 37 and 90
92. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
93. "review* of reviews".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
94. meta-analy*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
95. metaanaly*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
96. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
97. "research evidence".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
98. metasynthe*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
99. meta-synthe*.tw.
100. systematic review/
101. "systematic review (topic)"/
102. meta analysis/
103. "meta analysis (topic)"/
104. 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103
105. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
106. RETRACTED ARTICLE/
107. 105 or 106
108. (animal$ not human$).sh,hw.
109. (book or conference paper or editorial or letter or review).pt. not exp randomized controlled trial/
110. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not exp randomized controlled trial/
111. 107 not (108 or 109 or 110)
112. 104 or 111
113. 91 and 112
114. limit 113 to (english language and yr="2014 -Current")

Benefits and Harms of Benzodiazepines - PSYCHINFO

1. exp Dementia/
2. dement*.mp.
3. alzheimer*.mp.
4. (lewy* adj2 bod*).mp.
5. (chronic adj2 cerebrovascular).mp.
6. ("organic brain disease" or "organic brain syndrome").mp.
7. ("normal pressure hydrocephalus" and "shunt*").mp.
8. "benign senescent forgetfulness".mp.
9. (cerebr* adj2 deteriorat*).mp.
10. (cerebral* adj2 insufficient*).mp.
11. (pick* adj2 disease).mp.
12. (creutzfeldt or jcd or cjd).mp.
13. huntington*.mp.
14. binswanger*.mp.
15. korsako*.mp.
16. exp Wernicke's Syndrome/
17. exp Huntingtons Disease/
18. exp Cognitive Impairment/

19. exp Kluver Bucy Syndrome/
20. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. exp benzodiazepines/
22. benzodiazepine*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
23. benzo*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
24. alprazolam.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
25. bromazepam.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
26. clobazam.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
27. diazepam.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
28. Clonazepam.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
29. flunitrazepam.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
30. lorazepam.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
31. midazolam.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
32. nitrazepam.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
33. oxazepam.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
34. temazepam.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
35. exp tranquilizing drugs/
36. tranquilli?er.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
37. anxiolytic.mp.
38. muscle relaxant.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
39. 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38
40. Behavior Problems/
41. Aggressive Behavior/
42. Psychiatric Symptoms/
43. Mental Disorders/
44. Sleep Wake Disorders/
45. Wandering Behavior/
46. Antisocial Behavior/
47. BPSD.ti,ab.
48. (behavio?ral and psychological symptom*).ti,ab.
49. non-cognitive symptom*.ti,ab.
50. aber?ant motor behavio?r.ti,ab.
51. agitat*.ti,ab.
52. delusion*.ti,ab.
53. aggress*.ti,ab.
54. depress*.ti,ab.
55. disruptive.ti,ab.
56. euphoria.ti,ab.
57. hallucination*.ti,ab.
58. irritabil*.ti,ab.
59. labil*.ti,ab.
60. mood.ti,ab.
61. defiant.ti,ab.
62. psychosis.ti,ab.
63. restlessness.ti,ab.
64. sociopathy.ti,ab.
65. sleep.ti,ab.
66. verbal hostility.ti,ab.
67. violence.ti,ab.
68. wandering.ti,ab.
69. hoarding.ti,ab.
70. screaming.ti,ab.
71. vocali?ation.ti,ab.
72. disinhibition.ti,ab.
73. sundown*.ti,ab.
74. responsive behavio?r*.ti,ab.
75. anxiety.ti,ab.
76. apathy.ti,ab.

77.	neuropsychiatric symptoms.ti,ab.
78.	changed behavio?r*.ti,ab.
79.	Mortality/
80.	Caregivers/
81.	"Quality of Life"/
82.	Patient Satisfaction/
83.	Mortality.ti,ab.
84.	side effect*.ti,ab.
85.	adverse effect*.ti,ab.
86.	adverse event*.ti,ab.
87.	harm*.ti,ab.
88.	safety.ti,ab.
89.	Caregiv* burden.ti,ab.
90.	carer* burden.ti,ab.
91.	Quality of Life.ti,ab.
92.	dying.ti,ab.
93.	undesirable effects.ti,ab.
94.	harmful effects.ti,ab.
95.	adverse drug reaction*.ti,ab.
96.	serious adverse event*.ti,ab.
97.	"Side Effects (Treatment)"/
98.	"Side Effects (Drug)"/
99.	"health resource use".ti,ab.
100.	resident satisfaction.ti,ab.
101.	40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100
102.	20 and 39 and 101
103.	(systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
104.	((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
105.	"review* of reviews".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
106.	meta-analy*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
107.	metaanaly*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
108.	((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
109.	"research evidence".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
110.	metasynthe*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
111.	exp Review/
112.	Meta-Analysis/
113.	"systematic review"/
114.	double-blind.tw.
115.	randomised.mp.
116.	randomized.tw.
117.	randomly assigned.tw.
118.	114 or 115 or 116 or 117
119.	103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113
120.	118 or 119
121.	102 and 120
122.	limit 121 to (english language and yr="2014 -Current")

Benefits and Harms of Benzodiazepines - CINHAL

#	Query
S126	S90 AND S125
S125	S101 OR S124
S124	S121 NOT S123
S123	S122 NOT S102
S122	S103 OR S104 OR S105
S121	S106 OR S107 OR S108 OR S109 OR S110 OR S111 OR S112 OR S113 OR S114 OR S115 OR S116 OR S117 OR S118 OR S119 OR S120
S120	MH randomized controlled trials
S119	MH double-blind studies
S118	MH single-blind studies
S117	MH random assignment
S116	MH pretest-posttest design

S115	MH cluster sample
S114	TI (randomised OR randomized)
S113	AB (random*)
S112	TI (trial)
S111	MH (sample size) AND AB (assigned OR allocated OR control)
S110	MH (placebos)
S109	PT (randomized controlled trial)
S108	AB (control W5 group)
S107	MH (crossover design) OR MH (comparative studies)
S106	AB (cluster W3 RCT)
S105	MH animals+
S104	MH (animal studies)
S103	TI (animal model*)
S102	MH (human)
S101	S91 OR S92 OR S93 OR S94 OR S95 OR S96 OR S97 OR S98 OR S99 OR S100
S100	TX systematic review or meta-analysis
S99	MH systematic review
S98	meta-analysis or systematic review
S97	exp Review Literature as Topic/
S96	TX metasynthe*
S95	TX "research evidence"
S94	TX metaanaly*
S93	TX meta-analy*
S92	"review* of reviews"
S91	TX (systematic or state-of-the-art or scoping or literature or umbrella)
S90	S11 AND S31 AND S89
S89	S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79 OR S80 OR S81 OR S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88
S88	MH Mortality
S87	TI Mortality AND AB Mortality
S86	(MH "Adverse Drug Event+")
S85	TI side effect* AND AB side effect*
S84	TI adverse effect* AND AB adverse effect*
S83	TI adverse event* AND AB adverse event*
S82	TI harm* AND AB harm*
S81	TI safety AND AB safety
S80	(MH "Caregiver Burden")
S79	TI Care* Burden AND AB Care* Burden
S78	MH Quality of Life
S77	TI Quality of Life AND AB Quality of Life
S76	MH Patient Satisfaction
S75	TI Patient Satisfaction AND AB Patient Satisfaction
S74	TI "resident satisfaction" AND AB "resident satisfaction"
S73	TI health resource use AND AB health resource use
S72	TI health resource utilization AND AB health resource utilization
S71	MH health resource utilization
S70	TI "serious adverse event" AND AB "serious adverse event"
S69	TI death AND AB death
S68	TI dying AND AB dying
S67	TI undesirable effects AND AB undesirable effects
S66	TI harmful effects AND AB harmful effects
S65	(MH "Behavioral Symptoms+")
S64	TI (behavio?ral and psychological symptoms of dementia') AND AB ('behavio?ral and psychological symptoms of dementia')
S63	TI neuropsychiatric symptoms AND AB neuropsychiatric symptoms
S62	TI challenging behaviour AND AB challenging behaviour
S61	AB "non-cognitive symptoms" AND TI "non-cognitive symptoms"
S60	TI bpsd AND AB bpsd
S59	TI "aber?ant motor behavio?r" AND AB "aber?ant motor behavio?r"
S58	TI "aberrant motor behaviour" AND AB "aberrant motor behaviour"
S57	TI agitat* AND AB agitat*
S56	TI aggress* AND AB aggress*
S55	TI delusion* AND AB delusion*
S54	TI depress* AND AB depress*
S53	TI disruptive AND AB disruptive
S52	TI euphoria AND AB euphoria
S51	TI hallucination* AND AB hallucination*
S50	TI irritabil* AND AB irritabil*
S49	AB labil* AND TI labil*
S48	TI mood AND AB mood

S47	TI defiant AND AB defiant
S46	TI psychosis AND AB psychosis
S45	TI restlessness AND AB restlessness
S44	TI sociopathy AND AB sociopathy
S43	TI sleep AND AB sleep
S42	TI verbal hostility AND AB verbal hostility
S41	TI violence AND AB violence
S40	TI wandering AND AB wandering
S39	TI hoarding AND AB hoarding
S38	TI screaming AND AB screaming
S37	TI vocali?ation AND AB vocali?ation
S36	TI disinhibition AND AB disinhibition
S35	TI sundown* AND AB sundown*
S34	TI responsive behavio?r* AND AB responsive behavio?r*
S33	TI anxiety AND AB anxiety
S32	TI apathy AND AB apathy
S31	S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30
S30	(MH "Antianxiety Agents, Benzodiazepine+")
S29	TX benzodiazepine*
S28	TX Clonazepam
S27	TX benzo*
S26	TX alprazolam
S25	TX bromazepam
S24	TX clobazam
S23	TX diazepam
S22	TX flunitrazepam
S21	TX lorazepam
S20	TX midazolam
S19	TX nitrazepam
S18	TX oxazepam
S17	TX temazepam
S16	(MH "Antianxiety Agents+")
S15	(MH "Tranquilizing Agents+")
S14	TX tranquilli?er
S13	TX anxiolytic
S12	TX muscle relaxant
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10
S10	("Dementia")
S9	(MH "Dementia+")
S8	(MH "Dementia, Vascular+")
S7	(MH "Delirium, Dementia, Amnestic, Cognitive Disorders+")
S6	(MH "Dementia, Multi-Infarct")
S5	(MH "Dementia, Presenile+")
S4	(MH "Dementia, Senile+")
S3	("Alzheimer Disease")
S2	(MH "Alzheimer's Disease")
S1	"Lewy Body Disease"

Benefits and Harms of Benzodiazepines - CENTRAL

#1	MeSH descriptor: [Dementia] explode all trees
#2	MeSH descriptor: [Wernicke Encephalopathy] this term only
#3	MeSH descriptor: [Neurocognitive Disorders] explode all trees
#4	dement*
#5	alzheimer*
#6	(lewy* adj2 bod*)
#7	(chronic adj2 cerebrovascular)
#8	("organic brain disease" or "organic brain syndrome")
#9	("normal pressure hydrocephalus" and "shunt*")
#10	"benign senescent forgetfulness"
#11	(cerebr* adj2 deteriorat*)
#12	(cerebral* adj2 insufficient*)
#13	(pick* adj2 disease)
#14	(creutzfeldt or jcd or cjd)
#15	huntington*
#16	binswanger*
#17	korsako*
#18	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17
#42	MeSH descriptor: [Behavioral Symptoms] explode all trees

#43 BPSD
#44 behavio?ral and psychological symptom*
#45 non-cognitive symptom*
#46 aber?ant motor behavio?r
#47 agitat*
#48 aggress*
#49 delusion*
#50 depress*
#51 disruptive
#52 euphoria
#53 hallucination*
#54 irritabil*
#55 labil*
#56 mood
#57 defiant
#58 psychosis
#59 restlessness
#60 sociopathy
#61 sleep
#62 verbal hostility
#63 violence
#64 wandering
#65 hoarding
#66 screaming
#67 vocali?ation
#68 disinhibition
#69 sundown*
#70 responsive behavio?r*
#71 anxiety
#72 apathy
#73 neuropsychiatric symptom*
#74 changed behavio?r
#75 MeSH descriptor: [Mortality] explode all trees
#76 MeSH descriptor: [Caregivers] explode all trees9
#77 MeSH descriptor: [Quality of Life] explode all trees
#78 MeSH descriptor: [Patient Satisfaction] explode all trees
#79 death
#80 Mortality
#81 side effect*
#82 MeSH descriptor: [Drug-Related Side Effects and Adverse Reactions] explode all trees
#83 adverse effect*
#84 adverse event*
#85 harm*
#86 safety
#87 Caregiv* burden
#88 carer* burden
#89 Quality of Life
#90 dying
#91 undesirable effects
#92 harmful effects
#93 adverse drug reaction*
#94 serious adverse event*
#95 MeSH descriptor: [Prevalence] this term only
#96 prevalence:ti,ab
#97 #42 Or #43 OR #44 OR #45 OR #46 OR #47 Or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68 or #69 or #70 or #71 or #72 or #73 or #74 or #75 or #76 or #77 or #78 or #79 or #80 or #81 or #82 or #83 or #84 or #85 or #86 or #87 or #88 or #89 or #90 or #91 or #92 or #93 or #94 or #95 or #96
#146 MeSH descriptor: [Benzodiazepines] explode all trees
#147 benzodiazepine*
#148 benzo*
#149 alprazolam
#150 bromazepam
#151 clobazam
#152 diazepam
#153 Clonazepam
#154 flunitrazepam
#155 lorazepam
#156 midazolam
#157 nitrazepam
#158 oxazepam
#159 temazepam
#160 MeSH descriptor: [Tranquilizing Agents] explode all trees

#161 tranquilli?er
#162 MeSH descriptor: [Anti-Anxiety Agents] explode all trees
#163 muscle relaxant
#164 MeSH descriptor: [Muscle Relaxants, Central] explode all trees
#165 #146 OR #147 OR #148 OR #149 OR #150 OR #151 OR #152 OR #153 OR #154 OR #155 OR #156 OR #157 OR #158 OR #159 OR #160 OR #161 OR #162 OR #163 OR #164
#166 #18 AND #165 AND #97 with Cochrane Library publication date Between Jan 2014 and Sep 2021, in Cochrane Reviews, Cochrane Protocols, Trials, Clinical Answers

Discontinuation of Benzodiazepines

For people with dementia who have commenced benzodiazepine medication, should medication be discontinued?

Discontinuation of Benzodiazepines - Medline

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. Deprescriptions/
20. discontinu*.ti,ab.
21. withdraw*.ti,ab.
22. cessat*.ti,ab.
23. taper*.ti,ab.
24. stop*.ti,ab.
25. deprescribing.ti,ab.
26. ceas*.ti,ab.
27. decreas*.ti,ab.
28. deprescrib*.ti,ab.
29. de-prescrib*.ti,ab.
30. eliminat*.ti,ab.
31. substitut*.ti,ab.
32. reduc*.ti,ab.
33. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32
34. exp Benzodiazepines/
35. 33 and 34
36. exp Behavioral Symptoms/
37. BPSD.ti,ab.
38. (behavio?ral and psychological symptom*).ti,ab.
39. non-cognitive symptom*.ti,ab.
40. aber?ant motor behavio?r.ti,ab.
41. agitat*.ti,ab.
42. aggress*.ti,ab.
43. delusion*.ti,ab.
44. depress*.ti,ab.
45. disruptive.ti,ab.
46. euphoria.ti,ab.
47. hallucination*.ti,ab.
48. irritabil*.ti,ab.
49. labil*.ti,ab.
50. mood.ti,ab.
51. defiant.ti,ab.
52. psychosis.ti,ab.
53. restlessness.ti,ab.
54. sociopathy.ti,ab.
55. sleep.ti,ab.
56. verbal hostility.ti,ab.
57. violence.ti,ab.
58. wandering.ti,ab.

59. hoarding.ti,ab.
60. screaming.ti,ab.
61. vocali?ation.ti,ab.
62. disinhibition.ti,ab.
63. sundown*.ti,ab.
64. responsive behavio?r*.ti,ab.
65. anxiety.ti,ab.
66. apathy.ti,ab.
67. neuropsychiatric symptom*.ti,ab.
68. changed behavio?r*.ti,ab.
69. Mortality/
70. Caregivers/
71. "Quality of Life"/
72. Patient Satisfaction/
73. death.ti,ab.
74. Mortality.ti,ab.
75. side effect*.ti,ab.
76. adverse effect*.ab,ti.
77. adverse event*.ti,ab.
78. harm*.ab,ti.
79. safety.ab,ti.
80. Caregiv* burden.ti,ab.
81. carer* burden.ti,ab.
82. Quality of Life.ti,ab.
83. dying.ti,ab.
84. undesirable effects.ti,ab.
85. harmful effects.ti,ab.
86. adverse drug reaction*.ti,ab.
87. serious adverse event*.ti,ab.
88. "health resource use".ti,ab.
89. "resident satisfaction".ti,ab.
90. 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89
91. 18 and 35 and 90
92. (systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
93. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
94. "review* of reviews".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
95. meta-analy*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
96. metaanaly*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
97. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
98. "research evidence".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
99. metasynthe*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
100. exp Review Literature as Topic/
101. exp Review/
102. Meta-Analysis as Topic/
103. Meta-Analysis/
104. "systematic review"/
105. 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104
106. "randomized controlled trial".pt.
107. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
108. (retraction of publication or retracted publication).pt.
109. 106 or 107 or 108
110. (animals not humans).sh.

111. ((comment or editorial or meta-analysis or practice-guideline or review or letter or journal correspondence) not "randomized controlled trial").pt.
112. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not "randomized controlled trial".pt.
113. 109 not (110 or 111 or 112)
114. 105 or 113
115. 91 and 114
116. limit 115 to english language

Discontinuation of Benzodiazepines - EMBASE

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. deprescription/
20. discontinu*.ti,ab.
21. withdraw*.ti,ab.
22. cessat*.ti,ab.
23. reduc*.ab,ti.
24. reduct*.ti,ab.
25. taper*.ti,ab.
26. stop*.ti,ab.
27. deprescribing.ti,ab.
28. ceas*.ti,ab.
29. decreas*.ti,ab.
30. deprescrib*.ti,ab.
31. de-prescrib*.ti,ab.
32. eliminat*.ti,ab.
33. substitut*.ti,ab.
34. exp benzodiazepine/
35. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33
36. 34 and 35
37. exp Behavioral Symptoms/
38. BPSD.ti,ab.
39. (behavio?ral and psychological symptom*).ti,ab.
40. non-cognitive symptom*.ti,ab.
41. ab?er?ant motor behaviour.ti,ab.
42. agitat*.ti,ab.
43. aggress*.ti,ab.
44. delusion*.ti,ab.
45. disruptive.ti,ab.
46. euphoria.ti,ab.
47. hallucination*.ti,ab.
48. irritabil*.ti,ab.
49. labil*.ti,ab.
50. mood.ti,ab.
51. defiant.ti,ab.
52. psychosis.ti,ab.
53. restlessness.ti,ab.
54. sociopathy.ti,ab.
55. sleep.ti,ab.
56. verbal hostility.ti,ab.
57. violence.ti,ab.
58. wandering.ti,ab.
59. hoarding.ti,ab.
60. screaming.ti,ab.
61. vocali?ation.ti,ab.
62. disinhibition.ti,ab.

63. sundown*.ti,ab.
64. responsive behavio?r*.ti,ab.
65. anxiety.ti,ab.
66. apathy.ti,ab.
67. changed behavio?r*.ti,ab.
68. Mortality/
69. Caregivers/
70. "Quality of Life"/
71. Patient Satisfaction/
72. resident satisfaction.ti,ab.
73. "health resource use".ti,ab.
74. Mortality.ti,ab.
75. side effect*.ti,ab.
76. adverse effect*.ab,ti.
77. adverse event*.ti,ab.
78. harm*.ab,ti.
79. safety.ab,ti.
80. Caregiv* burden.ti,ab.
81. carer* burden.ti,ab.
82. Quality of Life.ti,ab.
83. dying.ti,ab.
84. undesirable effects.ti,ab.
85. harmful effects.ti,ab.
86. adverse drug reaction*.ti,ab.
87. serious adverse event*.ti,ab.
88. adverse drug reaction/ or adverse event/
89. 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88
90. 18 and 36 and 89
91. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
92. "review* of reviews".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
93. meta-analy*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
94. metaanaly*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
95. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
96. "research evidence".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
97. metasynthe*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
98. meta-synthe*.tw.
99. systematic review/
100. "systematic review (topic)"/
101. meta analysis/
102. "meta analysis (topic)"/
103. 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102
104. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
105. RETRACTED ARTICLE/
106. 104 or 105
107. (animal$ not human$).sh,hw.
108. (book or conference paper or editorial or letter or review).pt. not exp randomized controlled trial/
109. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not exp randomized controlled trial/
110. 106 not (107 or 108 or 109)
111. 103 or 110
112. 90 and 111
113. limit 112 to english language

Discontinuation of Benzodiazepines - PSYCHINFO

1. exp Dementia/
2. dement*.mp.
3. alzheimer*.mp.
4. (lewy* adj2 bod*).mp.
5. (chronic adj2 cerebrovascular).mp.

6. ("organic brain disease" or "organic brain syndrome").mp.
7. ("normal pressure hydrocephalus" and "shunt*").mp.
8. "benign senescent forgetfulness".mp.
9. (cerebr* adj2 deteriorat*).mp.
10. (cerebral* adj2 insufficient*).mp.
11. (pick* adj2 disease).mp.
12. (creutzfeldt or jcd or cjd).mp.
13. huntington*.mp.
14. binswanger*.mp.
15. korsako*.mp.
16. exp Wernicke's Syndrome/
17. exp Huntingtons Disease/
18. exp Cognitive Impairment/
19. exp Kluver Bucy Syndrome/
20. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. Deprescription.ti,ab.
22. discontinu*.ti,ab.
23. withdraw*.ti,ab.
24. cessat*.ti,ab.
25. taper*.ti,ab.
26. stop*.ti,ab.
27. reduc*.ti,ab.
28. ceas*.ti,ab.
29. decreas*.ti,ab.
30. deprescrib*.ti,ab.
31. de-prescrib*.ti,ab.
32. eliminat*.ti,ab.
33. substitut*.ti,ab.
34. exp Benzodiazepines/
35. 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33
36. 34 and 35
37. Behavior Problems/
38. Aggressive Behavior/
39. Psychiatric Symptoms/
40. Mental Disorders/
41. Sleep Wake Disorders/
42. Wandering Behavior/
43. Antisocial Behavior/
44. BPSD.ti,ab.
45. (behavio?ral and psychological symptom*).ti,ab.
46. non-cognitive symptom*.ti,ab.
47. aber?ant motor behavio?r.ti,ab.
48. agitat*.ti,ab.
49. delusion*.ti,ab.
50. aggress*.ti,ab.
51. depress*.ti,ab.
52. disruptive.ti,ab.
53. euphoria.ti,ab.
54. hallucination*.ti,ab.
55. irritabil*.ti,ab.
56. labil*.ti,ab.
57. mood.ti,ab.
58. defiant.ti,ab.
59. psychosis.ti,ab.
60. restlessness.ti,ab.
61. sociopathy.ti,ab.
62. sleep.ti,ab.
63. verbal hostility.ti,ab.
64. violence.ti,ab.
65. wandering.ti,ab.
66. hoarding.ti,ab.
67. screaming.ti,ab.
68. vocali?ation.ti,ab.
69. disinhibition.ti,ab.
70. sundown*.ti,ab.
71. responsive behavio?r*.ti,ab.
72. anxiety.ti,ab.
73. apathy.ti,ab.
74. neuropsychiatric symptoms.ti,ab.
75. changed behavio?r*.ti,ab.
76. Mortality/
77. Caregivers/
78. "Quality of Life"/

79.	Patient Satisfaction/
80.	Mortality.ti,ab.
81.	side effect*.ti,ab.
82.	adverse effect*.ti,ab.
83.	adverse event*.ti,ab.
84.	harm*.ti,ab.
85.	safety.ti,ab.
86.	Caregiv* burden.ti,ab.
87.	carer* burden.ti,ab.
88.	Quality of Life.ti,ab.
89.	dying.ti,ab.
90.	undesirable effects.ti,ab.
91.	harmful effects.ti,ab.
92.	adverse drug reaction*.ti,ab.
93.	serious adverse event*.ti,ab.
94.	"Side Effects (Treatment)"/
95.	"Side Effects (Drug)"/
96.	"health resource use".ti,ab.
97.	resident satisfaction.ti,ab.
98.	37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97
99.	20 and 36 and 98
100.	(systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
101.	((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
102.	"review* of reviews".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
103.	meta-analy*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
104.	metaanaly*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
105.	((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
106.	"research evidence".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
107.	metasynthe*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
108.	exp Review/
109.	Meta-Analysis/
110.	"systematic review"/
111.	double-blind.tw.
112.	randomised.mp.
113.	randomized.tw.
114.	randomly assigned.tw.
115.	111 or 112 or 113 or 114
116.	100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110
117.	115 or 116
118.	99 and 117
119.	limit 118 to english language

Discontinuation of Benzodiazepines - CINHAL

#	**Query**
S120	S116 AND S119
S119	S11 AND S81 AND S118
S118	S23 AND S117
S117	(MH "Antianxiety Agents, Benzodiazepine+")
S116	S92 OR S115
S115	S112 NOT S114
S114	S113 NOT S93
S113	S94 OR S95 OR S96
S112	S97 OR S98 OR S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110 OR S111
S111	MH randomized controlled trials
S110	MH double-blind studies
S109	MH single-blind studies
S108	MH random assignment
S107	MH pretest-posttest design
S106	MH cluster sample

S105	TI (randomised OR randomized)
S104	AB (random*)
S103	TI (trial)
S102	MH (sample size) AND AB (assigned OR allocated OR control)
S101	MH (placebos)
S100	PT (randomized controlled trial)
S99	AB (control W5 group)
S98	MH (crossover design) OR MH (comparative studies)
S97	AB (cluster W3 RCT)
S96	MH animals+
S95	MH (animal studies)
S94	TI (animal model*)
S93	MH (human)
S92	S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88 OR S89 OR S90 OR S91
S91	TX systematic review or meta-analysis
S90	MH systematic review
S89	meta-analysis or systematic review
S88	exp Review Literature as Topic/
S87	TX metasynthe*
S86	TX "research evidence"
S85	TX metaanaly*
S84	TX meta-analy*
S83	"review* of reviews"
S82	TX (systematic or state-of-the-art or scoping or literature or umbrella)
S81	S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79 OR S80
S80	MH Mortality
S79	TI Mortality AND AB Mortality
S78	(MH "Adverse Drug Event+")
S77	TI side effect* AND AB side effect*
S76	TI adverse effect* AND AB adverse effect*
S75	TI adverse event* AND AB adverse event*
S74	TI harm* AND AB harm*
S73	TI safety AND AB safety
S72	(MH "Caregiver Burden")
S71	TI Care* Burden AND AB Care* Burden
S70	MH Quality of Life
S69	TI Quality of Life AND AB Quality of Life
S68	MH Patient Satisfaction
S67	TI Patient Satisfaction AND AB Patient Satisfaction
S66	TI "resident satisfaction" AND AB "resident satisfaction"
S65	TI health resource use AND AB health resource use
S64	TI health resource utilization AND AB health resource utilization
S63	MH health resource utilization
S62	TI "serious adverse event" AND AB "serious adverse event"
S61	TI death AND AB death
S60	TI dying AND AB dying
S59	TI undesirable effects AND AB undesirable effects
S58	TI harmful effects AND AB harmful effects
S57	(MH "Behavioral Symptoms+")
S56	TI (behavio?ral and psychological symptoms of dementia') AND AB ('behavio?ral and psychological symptoms of dementia')
S55	TI neuropsychiatric symptoms AND AB neuropsychiatric symptoms
S54	TI challenging behaviour AND AB challenging behaviour
S53	AB "non-cognitive symptoms" AND TI "non-cognitive symptoms"
S52	TI bpsd AND AB bpsd
S51	TI "aber?ant motor behavio?r" AND AB "aber?ant motor behavio?r"
S50	TI "aberrant motor behaviour" AND AB "aberrant motor behaviour"
S49	TI agitat* AND AB agitat*
S48	TI aggress* AND AB aggress*
S47	TI delusion* AND AB delusion*
S46	TI depress* AND AB depress*
S45	TI disruptive AND AB disruptive
S44	TI euphoria AND AB euphoria
S43	TI hallucination* AND AB hallucination*
S42	TI irritabil* AND AB irritabil*
S41	AB labil* AND TI labil*
S40	TI mood AND AB mood
S39	TI defiant AND AB defiant
S38	TI psychosis AND AB psychosis

S37	TI restlessness AND AB restlessness
S36	TI sociopathy AND AB sociopathy
S35	TI sleep AND AB sleep
S34	TI verbal hostility AND AB verbal hostility
S33	TI violence AND AB violence
S32	TI wandering AND AB wandering
S31	TI hoarding AND AB hoarding
S30	TI screaming AND AB screaming
S29	TI vocali?ation AND AB vocali?ation
S28	TI disinhibition AND AB disinhibition
S27	TI sundown* AND AB sundown*
S26	TI responsive behavio?r* AND AB responsive behavio?r*
S25	TI anxiety AND AB anxiety
S24	TI apathy AND AB apathy
S23	S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22
S22	TI eliminat* AND AB eliminat*
S21	TI substitut* AND AB substitut*
S20	TI decreas* AND AB decreas*
S19	TI De-prescri* AND AB De-prescri*
S18	TI Deprescri* AND AB Deprescri*
S17	TI discontinu* AND AB discontinu*
S16	TI withdraw* AND AB withdraw*
S15	TI cessat* AND AB cessat*
S14	TI reduc* AND AB reduc*
S13	TI taper* AND AB taper*
S12	TI stop* AND AB stop*
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10
S10	("Dementia")
S9	(MH "Dementia+")
S8	(MH "Dementia, Vascular+")
S7	(MH "Delirium, Dementia, Amnestic, Cognitive Disorders+")
S6	(MH "Dementia, Multi-Infarct")
S5	(MH "Dementia, Presenile+")
S4	(MH "Dementia, Senile+")
S3	("Alzheimer Disease")
S2	(MH "Alzheimer's Disease")
S1	"Lewy Body Disease"

#1	MeSH descriptor: [Dementia] explode all trees
#2	MeSH descriptor: [Wernicke Encephalopathy] this term only
#3	MeSH descriptor: [Neurocognitive Disorders] explode all trees
#4	dement*
#5	alzheimer*
#6	(lewy* adj2 bod*)
#7	(chronic adj2 cerebrovascular)
#8	("organic brain disease" or "organic brain syndrome")
#9	("normal pressure hydrocephalus" and "shunt*")
#10	"benign senescent forgetfulness"
#11	(cerebr* adj2 deteriorat*)
#12	(cerebral* adj2 insufficient*)
#13	(pick* adj2 disease)
#14	(creutzfeldt or jcd or cjd)
#15	huntington*
#16	binswanger*
#17	korsako*
#18	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17
#42	MeSH descriptor: [Behavioral Symptoms] explode all trees
#43	BPSD
#44	behavio?ral and psychological symptom*
#45	non-cognitive symptom*
#46	aber?ant motor behavio?r
#47	agitat*
#48	aggress*
#49	delusion*
#50	depress*
#51	disruptive
#52	euphoria
#53	hallucination*
#54	irritabil*
#55	labil*
#56	mood
#57	defiant
#58	psychosis
#59	restlessness
#60	sociopathy
#61	sleep
#62	verbal hostility
#63	violence
#64	wandering
#65	hoarding
#66	screaming
#67	vocali?ation
#68	disinhibition
#69	sundown*
#70	responsive behavio?r*
#71	anxiety
#72	apathy
#73	neuropsychiatric symptom*
#74	changed behavio?r
#75	MeSH descriptor: [Mortality] explode all trees
#76	MeSH descriptor: [Caregivers] explode all trees9
#77	MeSH descriptor: [Quality of Life] explode all trees
#78	MeSH descriptor: [Patient Satisfaction] explode all trees
#79	death
#80	Mortality
#81	side effect*
#82	MeSH descriptor: [Drug-Related Side Effects and Adverse Reactions] explode all trees
#83	adverse effect*
#84	adverse event*
#85	harm*
#86	safety
#87	Caregiv* burden
#88	carer* burden
#89	Quality of Life

#90 dying
#91 undesirable effects
#92 harmful effects
#93 adverse drug reaction*
#94 serious adverse event*
#95 MeSH descriptor: [Prevalence] this term only
#96 prevalence:ti,ab
#97 #42 Or #43 OR #44 OR #45 OR #46 OR #47 Or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68 or #69 or #70 or #71 or #72 or #73 or #74 or #75 or #76 or #77 or #78 or #79 or #80 or #81 or #82 or #83 or #84 or #85 or #86 or #87 or #88 or #89 or #90 or #91 or #92 or #93 or #94 or #95 or #96
#100 MeSH descriptor: [Benzodiazepines] explode all trees 9904
#101 Deprescriptions 48
#102 discontinu* 43862
#103 withdraw* 54645
#104 cessat* 19388
#105 reduc* 461539
#106 taper* 6000
#107 stop* 29846
#108 ceas* 2553
#109 decreas* 253648
#110 deprescrib* 218
#111 de-prescrib* 54
#112 deprescription 39
#113 eliminat* 23856
#114 substitut* 16072
#115 #101 or #102 OR #103 or #104 OR #105 OR #106 OR #107 OR #108 OR #109 OR #110 OR #111 OR #112 OR #113 OR #114 691428
#117 #100 AND #115 4456

Benefits and Harms of Antidepressants

In people with dementia and changed behaviours, what are the risks and benefits of antidepressant medication use compared to not using antidepressants?

Benefits and Harms of Antidepressants -Medline

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. exp Antidepressive Agents/
20. antidepressant*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
21. anti-depressant*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
22. exp Monoamine Oxidase Inhibitors/
23. MAOI.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
24. phenelzine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

25. tranylcypromine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
26. nontricyclic antidepressant*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
27. tricyclic antidepressant*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
28. TCA.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
29. amitriptyline.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
30. clomipramine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
31. agomelatine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
32. dosulepin.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
33. doxepin.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
34. imipramine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
35. nortriptyline.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
36. reboxetine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
37. selective serotonin reuptake inhibitor*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
38. SSRI.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
39. citalopram.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
40. escitalopram.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
41. fluoxetine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
42. fluvoxamine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
43. paroxetine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
44. sertraline.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
45. exp "Serotonin and Noradrenaline Reuptake Inhibitors"/
46. (serotonin and noradrenaline reuptake inhibitor*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
47. SNRI.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
48. desvenlafaxine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

49. duloxetine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
50. milnacipran.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
51. venlafaxine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
52. mianserin.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
53. mirtazapine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
54. moclobemide.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
55. reboxetine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
56. vortioxetine.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
57. exp Serotonin Uptake Inhibitors/
58. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57
59. exp Behavioral Symptoms/
60. BPSD.ti,ab.
61. (behavio?ral and psychological symptom*).ti,ab.
62. non-cognitive symptom*.ti,ab.
63. aber?ant motor behavio?r.ti,ab.
64. agitat*.ti,ab.
65. aggress*.ti,ab.
66. delusion*.ti,ab.
67. depress*.ti,ab.
68. disruptive.ti,ab.
69. euphoria.ti,ab.
70. hallucination*.ti,ab.
71. irritabil*.ti,ab.
72. labil*.ti,ab.
73. mood.ti,ab.
74. defiant.ti,ab.
75. psychosis.ti,ab.
76. restlessness.ti,ab.
77. sociopathy.ti,ab.
78. sleep.ti,ab.
79. verbal hostility.ti,ab.
80. violence.ti,ab.
81. wandering.ti,ab.
82. hoarding.ti,ab.
83. screaming.ti,ab.
84. vocali?ation.ti,ab.
85. disinhibition.ti,ab.
86. sundown*.ti,ab.
87. responsive behavio?r*.ti,ab.
88. anxiety.ti,ab.
89. apathy.ti,ab.
90. neuropsychiatric symptom*.ti,ab.
91. changed behavio?r*.ti,ab.
92. Mortality/
93. Caregivers/
94. "Quality of Life"/
95. Patient Satisfaction/
96. death.ti,ab.
97. Mortality.ti,ab.
98. side effect*.ti,ab.
99. adverse effect*.ab,ti.
100. adverse event*.ti,ab.
101. harm*.ab,ti.
102. safety.ab,ti.
103. Caregiv* burden.ti,ab.

104. carer* burden.ti,ab.
105. Quality of Life.ti,ab.
106. dying.ti,ab.
107. undesirable effects.ti,ab.
108. harmful effects.ti,ab.
109. adverse drug reaction*.ti,ab.
110. serious adverse event*.ti,ab.
111. "health resource use".ti,ab.
112. "resident satisfaction".ti,ab.
113. Health Resources/
114. 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113
115. 18 and 58 and 114
116. (systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
117. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
118. "review* of reviews".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
119. meta-analy*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
120. metaanaly*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
121. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
122. "research evidence".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
123. metasynthe*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
124. exp Review Literature as Topic/
125. exp Review/
126. Meta-Analysis as Topic/
127. Meta-Analysis/
128. "systematic review"/
129. 116 or 117 or 118 or 119 or 120 or 121 or 122 or 123 or 124 or 125 or 126 or 127 or 128
130. "randomized controlled trial".pt.
131. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
132. (retraction of publication or retracted publication).pt.
133. 130 or 131 or 132
134. (animals not humans).sh.
135. ((comment or editorial or meta-analysis or practice-guideline or review or letter or journal correspondence) not "randomized controlled trial").pt.
136. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not "randomized controlled trial".pt.
137. 133 not (134 or 135 or 136)
138. 129 or 137
139. 115 and 138
140. limit 139 to (english language and yr="2014 -Current")

Benefits and Harms of Antidepressants - EMBASE

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.

10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. exp antidepressant agent/
20. antidepressant*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
21. anti-depressant*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
22. exp monoamine oxidase inhibitor/
23. MAOI.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
24. phenelzine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
25. tranylcypromine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
26. nontricyclic antidepressant*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
27. tricyclic antidepressant*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
28. exp tricyclic antidepressant agent/
29. TCA.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
30. amitriptyline.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
31. clomipramine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
32. agomelatine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
33. dosulepin.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
34. doxepin.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
35. imipramine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
36. nortriptyline.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
37. reboxetine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
38. exp serotonin uptake inhibitor/
39. selective serotonin reuptake inhibitor*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
40. SSRI.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
41. citalopram.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
42. escitalopram.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
43. fluoxetine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
44. fluvoxamine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
45. paroxetine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
46. sertraline.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
47. (Serotonin and Noradrenaline Reuptake Inhibitors).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
48. exp serotonin noradrenalin reuptake inhibitor/
49. "Serotonin and Noradrenaline Reuptake Inhibitor*".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
50. SNRI.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
51. desvenlafaxine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]

52. duloxetine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
53. milnacipran.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
54. venlafaxine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
55. mianserin.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
56. mirtazapine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
57. moclobemide.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
58. reboxetine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
59. vortioxetine.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
60. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59
61. exp Behavioral Symptoms/
62. BPSD.ti,ab.
63. (behavio?ral and psychological symptom*).ti,ab.
64. non-cognitive symptom*.ti,ab.
65. ab?er?ant motor behaviour.ti,ab.
66. agitat*.ti,ab.
67. aggress*.ti,ab.
68. delusion*.ti,ab.
69. disruptive.ti,ab.
70. euphoria.ti,ab.
71. hallucination*.ti,ab.
72. irritabil*.ti,ab.
73. labil*.ti,ab.
74. mood.ti,ab.
75. defiant.ti,ab.
76. psychosis.ti,ab.
77. restlessness.ti,ab.
78. sociopathy.ti,ab.
79. sleep.ti,ab.
80. verbal hostility.ti,ab.
81. violence.ti,ab.
82. wandering.ti,ab.
83. hoarding.ti,ab.
84. screaming.ti,ab.
85. vocali?ation.ti,ab.
86. disinhibition.ti,ab.
87. sundown*.ti,ab.
88. responsive behavio?r*.ti,ab.
89. anxiety.ti,ab.
90. apathy.ti,ab.
91. changed behavio?r*.ti,ab.
92. Mortality/
93. Caregivers/
94. "Quality of Life"/
95. Patient Satisfaction/
96. resident satisfaction.ti,ab.
97. "health resource use".ti,ab.
98. Mortality.ti,ab.
99. side effect*.ti,ab.
100. adverse effect*.ab,ti.
101. adverse event*.ti,ab.
102. harm*.ab,ti.
103. safety.ab,ti.
104. Caregiv* burden.ti,ab.
105. carer* burden.ti,ab.
106. Quality of Life.ti,ab.
107. dying.ti,ab.
108. undesirable effects.ti,ab.
109. harmful effects.ti,ab.
110. adverse drug reaction*.ti,ab.
111. serious adverse event*.ti,ab.
112. adverse drug reaction/ or adverse event/

113. 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112
114. 18 and 60 and 113
115. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
116. "review* of reviews".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
117. meta-analy*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
118. metaanaly*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
119. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
120. "research evidence".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
121. metasynthe*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
122. meta-synthe*.tw.
123. systematic review/
124. "systematic review (topic)"/
125. meta analysis/
126. "meta analysis (topic)"/
127. 115 or 116 or 117 or 118 or 119 or 120 or 121 or 122 or 123 or 124 or 125 or 126
128. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
129. RETRACTED ARTICLE/
130. 128 or 129
131. (animal$ not human$).sh,hw.
132. (book or conference paper or editorial or letter or review).pt. not exp randomized controlled trial/
133. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not exp randomized controlled trial/
134. 130 not (131 or 132 or 133)
135. 127 or 134
136. 114 and 135
137. limit 136 to (english language and yr="2014 -Current")

Benefits and Harms of Antidepressants - PSYCHINFO

1. exp Dementia/
2. dement*.mp.
3. alzheimer*.mp.
4. (lewy* adj2 bod*).mp.
5. (chronic adj2 cerebrovascular).mp.
6. ("organic brain disease" or "organic brain syndrome").mp.
7. ("normal pressure hydrocephalus" and "shunt*").mp.
8. "benign senescent forgetfulness".mp.
9. (cerebr* adj2 deteriorat*).mp.
10. (cerebral* adj2 insufficient*).mp.
11. (pick* adj2 disease).mp.
12. (creutzfeldt or jcd or cjd).mp.
13. huntington*.mp.
14. binswanger*.mp.
15. korsako*.mp.
16. exp Wernicke's Syndrome/
17. exp Huntingtons Disease/
18. exp Cognitive Impairment/
19. exp Kluver Bucy Syndrome/
20. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. exp antidepressant drugs/
22. antidepressant*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
23. anti-depressant*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
24. exp Monoamine Oxidase Inhibitors/
25. MAOI.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
26. phenelzine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
27. tranylcypromine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]

28. nontricyclic antidepressant.mp.
29. exp Tricyclic Antidepressant Drugs/
30. TCA.mp.
31. amitriptyline.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
32. clomipramine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
33. agomelatine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
34. dosulepin.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
35. doxepin.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
36. imipramine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
37. nortriptyline.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
38. reboxetine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
39. exp Serotonin Reuptake Inhibitors/
40. selective serotonin reuptake inhibitor*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
41. SSRI.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
42. citalopram.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
43. escitalopram.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
44. fluoxetine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
45. fluvoxamine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
46. paroxetine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
47. sertraline.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
48. (Serotonin and Noradrenaline Reuptake Inhibitors).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
49. exp Serotonin Norepinephrine Reuptake Inhibitors/
50. "serotonin and noradrenaline reuptake inhibitor*".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
51. SNRI.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
52. desvenlafaxine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
53. duloxetine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
54. milnacipran.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
55. venlafaxine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
56. mianserin.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
57. mirtazapine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
58. moclobemide.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
59. reboxetine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
60. vortioxetine.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
61. 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60
62. Behavior Problems/
63. Aggressive Behavior/
64. Psychiatric Symptoms/
65. Mental Disorders/
66. Sleep Wake Disorders/
67. Wandering Behavior/
68. Antisocial Behavior/
69. BPSD.ti,ab.
70. (behavio?ral and psychological symptom*).ti,ab.

71. non-cognitive symptom*.ti,ab.
72. aber?ant motor behavio?r.ti,ab.
73. agitat*.ti,ab.
74. delusion*.ti,ab.
75. aggress*.ti,ab.
76. depress*.ti,ab.
77. disruptive.ti,ab.
78. euphoria.ti,ab.
79. hallucination*.ti,ab.
80. irritabil*.ti,ab.
81. labil*.ti,ab.
82. mood.ti,ab.
83. defiant.ti,ab.
84. psychosis.ti,ab.
85. restlessness.ti,ab.
86. sociopathy.ti,ab.
87. sleep.ti,ab.
88. verbal hostility.ti,ab.
89. violence.ti,ab.
90. wandering.ti,ab.
91. hoarding.ti,ab.
92. screaming.ti,ab.
93. vocali?ation.ti,ab.
94. disinhibition.ti,ab.
95. sundown*.ti,ab.
96. responsive behavio?r*.ti,ab.
97. anxiety.ti,ab.
98. apathy.ti,ab.
99. neuropsychiatric symptoms.ti,ab.
100. changed behavio?r*.ti,ab.
101. Mortality/
102. Caregivers/
103. "Quality of Life"/
104. Patient Satisfaction/
105. Mortality.ti,ab.
106. side effect*.ti,ab.
107. adverse effect*.ti,ab.
108. adverse event*.ti,ab.
109. harm*.ti,ab.
110. safety.ti,ab.
111. Caregiv* burden.ti,ab.
112. carer* burden.ti,ab.
113. Quality of Life.ti,ab.
114. dying.ti,ab.
115. undesirable effects.ti,ab.
116. harmful effects.ti,ab.
117. adverse drug reaction*.ti,ab.
118. serious adverse event*.ti,ab.
119. "Side Effects (Treatment)"/
120. "Side Effects (Drug)"/
121. "health resource use".ti,ab.
122. resident satisfaction.ti,ab.
123. 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113 or 114 or 115 or 116 or 117 or 118 or 119 or 120 or 121 or 122
124. 20 and 61 and 123
125. (systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
126. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
127. "review* of reviews".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
128. meta-analy*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
129. metaanaly*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
130. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
131. "research evidence".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]

132.	metasynthe*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
133.	exp Review/
134.	Meta-Analysis/
135.	"systematic review"/
136.	double-blind.tw.
137.	randomised.mp.
138.	randomized.tw.
139.	randomly assigned.tw.
140.	136 or 137 or 138 or 139
141.	125 or 126 or 127 or 128 or 129 or 130 or 131 or 132 or 133 or 134 or 135
142.	140 or 141
143.	124 and 142
144.	limit 143 to (english language and yr="2014 -Current")

Benefits and Harms of Antidepressants - CINHAL

#	Query
S148	S112 AND S147
S147	S123 OR S146
S146	S143 NOT S145
S145	S144 NOT S124
S144	S125 OR S126 OR S127
S143	S128 OR S129 OR S130 OR S131 OR S132 OR S133 OR S134 OR S135 OR S136 OR S137 OR S138 OR S139 OR S140 OR S141 OR S142
S142	MH randomized controlled trials
S141	MH double-blind studies
S140	MH single-blind studies
S139	MH random assignment
S138	MH pretest-posttest design
S137	MH cluster sample
S136	TI (randomised OR randomized)
S135	AB (random*)
S134	TI (trial)
S133	MH (sample size) AND AB (assigned OR allocated OR control)
S132	MH (placebos)
S131	PT (randomized controlled trial)
S130	AB (control W5 group)
S129	MH (crossover design) OR MH (comparative studies)
S128	AB (cluster W3 RCT)
S127	MH animals+
S126	MH (animal studies)
S125	TI (animal model*)
S124	MH (human)
S123	S113 OR S114 OR S115 OR S116 OR S117 OR S118 OR S119 OR S120 OR S121 OR S122
S122	TX systematic review or meta-analysis
S121	MH systematic review
S120	meta-analysis or systematic review

S119	exp Review Literature as Topic/
S118	TX metasynthe*
S117	TX "research evidence"
S116	TX metaanaly*
S115	TX meta-analy*
S114	"review* of reviews"
S113	TX (systematic or state-of-the-art or scoping or literature or umbrella)
S112	S11 AND S53 AND S111
S111	S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79 OR S80 OR S81 OR S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88 OR S89 OR S90 OR S91 OR S92 OR S93 OR S94 OR S95 OR S96 OR S97 OR S98 OR S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110
S110	MH Mortality
S109	TI Mortality AND AB Mortality
S108	(MH "Adverse Drug Event+")
S107	TI side effect* AND AB side effect*
S106	TI adverse effect* AND AB adverse effect*
S105	TI adverse event* AND AB adverse event*
S104	TI harm* AND AB harm*
S103	TI safety AND AB safety
S102	(MH "Caregiver Burden")
S101	TI Care* Burden AND AB Care* Burden
S100	MH Quality of Life
S99	TI Quality of Life AND AB Quality of Life
S98	MH Patient Satisfaction
S97	TI Patient Satisfaction AND AB Patient Satisfaction
S96	TI "resident satisfaction" AND AB "resident satisfaction"
S95	TI health resource use AND AB health resource use
S94	TI health resource utilization AND AB health resource utilization
S93	MH health resource utilization
S92	TI "serious adverse event" AND AB "serious adverse event"
S91	TI death AND AB death
S90	TI dying AND AB dying
S89	TI undesirable effects AND AB undesirable effects
S88	TI harmful effects AND AB harmful effects
S87	(MH "Behavioral Symptoms+")
S86	TI (behavio?ral and psychological symptoms of dementia') AND AB ('behavio?ral and psychological symptoms of dementia')
S85	TI neuropsychiatric symptoms AND AB neuropsychiatric symptoms
S84	TI challenging behaviour AND AB challenging behaviour

S83	AB "non-cognitive symptoms" AND TI "non-cognitive symptoms"
S82	TI bpsd AND AB bpsd
S81	TI "aber?ant motor behavio?r" AND AB "aber?ant motor behavio?r"
S80	TI "aberrant motor behaviour" AND AB "aberrant motor behaviour"
S79	TI agitat* AND AB agitat*
S78	TI aggress* AND AB aggress*
S77	TI delusion* AND AB delusion*
S76	TI depress* AND AB depress*
S75	TI disruptive AND AB disruptive
S74	TI euphoria AND AB euphoria
S73	TI hallucination* AND AB hallucination*
S72	TI irritabil* AND AB irritabil*
S71	AB labil* AND TI labil*
S70	TI mood AND AB mood
S69	TI defiant AND AB defiant
S68	TI psychosis AND AB psychosis
S67	TI restlessness AND AB restlessness
S66	TI sociopathy AND AB sociopathy
S65	TI sleep AND AB sleep
S64	TI verbal hostility AND AB verbal hostility
S63	TI violence AND AB violence
S62	TI wandering AND AB wandering
S61	TI hoarding AND AB hoarding
S60	TI screaming AND AB screaming
S59	TI vocali?ation AND AB vocali?ation
S58	TI disinhibition AND AB disinhibition
S57	TI sundown* AND AB sundown*
S56	TI responsive behavio?r* AND AB responsive behavio?r*
S55	TI anxiety AND AB anxiety
S54	TI apathy AND AB apathy
S53	S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52
S52	(MH "Antidepressive Agents+")
S51	(MH "Antidepressive Agents, Tricyclic+")
S50	(MH "Antidepressive Agents, Second Generation+")
S49	TX antidepressant*
S48	TX anti-depressant*
S47	(MH "Monoamine Oxidase Inhibitors+")
S46	MAOI

S45	TX phenelzine
S44	TX MAOI
S43	TX tranylcypromine
S42	TX nontricyclic antidepressant*
S41	TX tricyclic antidepressant*
S40	TX TCA
S39	TX amitriptyline
S38	TX clomipramine
S37	TX agomelatine
S36	TX dosulepin
S35	TX doxepin
S34	TX imipramine
S33	TX nortriptyline
S32	TX reboxetine
S31	(MH "Serotonin Uptake Inhibitors+")
S30	TX selective serotonin reuptake inhibitor*
S29	TX SSRI
S28	TX citalopram
S27	TX escitalopram
S26	TX fluoxetine
S25	TX fluvoxamine
S24	TX paroxetine
S23	TX sertraline
S22	TX Serotonin and Noradrenaline Reuptake Inhibitor*
S21	TX SNRI
S20	TX desvenlafaxine
S19	TX duloxetine
S18	TX milnacipran
S17	TX venlafaxine
S16	TX mianserin
S15	TX mirtazapine
S14	TX moclobemide
S13	TX reboxetine
S12	TX vortioxetine
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10
S10	("Dementia")
S9	(MH "Dementia+")
S8	(MH "Dementia, Vascular+")
S7	(MH "Delirium, Dementia, Amnestic, Cognitive Disorders+")
S6	(MH "Dementia, Multi-Infarct")

S5	(MH "Dementia, Presenile+")
S4	(MH "Dementia, Senile+")
S3	("Alzheimer Disease")
S2	(MH "Alzheimer's Disease")
S1	"Lewy Body Disease"

Benefits and Harms of Antidepressants - CENTRAL

Risks and Benefits of AD

#1	MeSH descriptor: [Dementia] explode all trees
#2	MeSH descriptor: [Wernicke Encephalopathy] this term only
#3	MeSH descriptor: [Neurocognitive Disorders] explode all trees
#4	dement*
#5	alzheimer*
#6	(lewy* adj2 bod*)
#7	(chronic adj2 cerebrovascular)
#8	("organic brain disease" or "organic brain syndrome")
#9	("normal pressure hydrocephalus" and "shunt*")
#10	"benign senescent forgetfulness"
#11	(cerebr* adj2 deteriorat*)
#12	(cerebral* adj2 insufficient*)
#13	(pick* adj2 disease)
#14	(creutzfeldt or jcd or cjd)
#15	huntington*
#16	binswanger*
#17	korsako*
#18	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17
#42	MeSH descriptor: [Behavioral Symptoms] explode all trees
#43	BPSD
#44	behavio?ral and psychological symptom*
#45	non-cognitive symptom*
#46	aber?ant motor behavio?r
#47	agitat*
#48	aggress*
#49	delusion*
#50	depress*
#51	disruptive
#52	euphoria
#53	hallucination*
#54	irritabil*
#55	labil*
#56	mood
#57	defiant
#58	psychosis
#59	restlessness
#60	sociopathy
#61	sleep
#62	verbal hostility
#63	violence
#64	wandering
#65	hoarding
#66	screaming
#67	vocali?ation
#68	disinhibition
#69	sundown*
#70	responsive behavio?r*
#71	anxiety
#72	apathy
#73	neuropsychiatric symptom*
#74	changed behavio?r
#75	MeSH descriptor: [Mortality] explode all trees
#76	MeSH descriptor: [Caregivers] explode all trees9
#77	MeSH descriptor: [Quality of Life] explode all trees
#78	MeSH descriptor: [Patient Satisfaction] explode all trees
#79	death
#80	Mortality
#81	side effect*
#82	MeSH descriptor: [Drug-Related Side Effects and Adverse Reactions] explode all trees

#83 adverse effect*
#84 adverse event*
#85 harm*
#86 safety
#87 Caregiv* burden
#88 carer* burden
#89 Quality of Life
#90 dying
#91 undesirable effects
#92 harmful effects
#93 adverse drug reaction*
#94 serious adverse event*
#95 MeSH descriptor: [Prevalence] this term only
#96 prevalence:ti,ab
#97 #42 Or #43 OR #44 OR #45 OR #46 OR #47 Or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68 or #69 or #70 or #71 or #72 or #73 or #74 or #75 or #76 or #77 or #78 or #79 or #80 or #81 or #82 or #83 or #84 or #85 or #86 or #87 or #88 or #89 or #90 or #91 or #92 or #93 or #94 or #95 or #96
#169 MeSH descriptor: [Antidepressive Agents] explode all trees
#170 antidepressant*
#171 anti-depressant*
#172 MeSH descriptor: [Monoamine Oxidase Inhibitors] explode all trees
#173 MAOI
#174 phenelzine
#175 tranylcypromine
#176 MeSH descriptor: [Antidepressive Agents, Second-Generation] explode all trees
#177 nontricyclic antidepressant*
#178 MeSH descriptor: [Antidepressive Agents, Tricyclic] explode all trees
#179 TCA
#180 amitriptyline
#181 clomipramine
#182 agomelatine
#183 dosulepin
#184 doxepin
#185 imipramine
#186 nortriptyline
#187 reboxetine
#188 MeSH descriptor: [Serotonin Uptake Inhibitors] explode all trees
#189 selective serotonin reuptake inhibitor*
#190 SSRI
#191 citalopram
#192 escitalopram
#193 fluoxetine
#194 fluvoxamine
#195 paroxetine
#196 sertraline
#197 MeSH descriptor: [Serotonin and Noradrenaline Reuptake Inhibitors] explode all trees
#198 serotonin and noradrenaline reuptake inhibitor*
#199 SNRI
#200 desvenlafaxine
#201 duloxetine
#202 milnacipran
#203 venlafaxine
#204 mianserin
#205 mirtazapine
#206 moclobemide
#207 reboxetine
#208 vortioxetine
#209 #176 OR #177 OR #178 OR #179 OR #180 OR #181 OR #182 OR #183 OR #184 OR #185 OR #186 OR #187 OR #188 OR #189 OR #190 OR #191 OR #192 OR #193 OR #194 OR #195 O #196 OR #197 OR #198 OR #199 OR #200 OR #201 OR #202 OR #203 OR #204 OR #205 OR #206 OR #207 OR #208
#212 #18 AND #209 AND #97 with Cochrane Library publication date Between Jan 2014 and Jul 2021, in Cochrane Reviews, Cochrane Protocols, Trials, Clinical Answers

Discontinuation of Antidepressants

For people with dementia who have commenced an antidepressant, should the medication be discontinued?

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. Deprescriptions/
20. discontinu*.ti,ab.
21. withdraw*.ti,ab.
22. cessat*.ti,ab.
23. taper*.ti,ab.
24. stop*.ti,ab.
25. deprescribing.ti,ab.
26. ceas*.ti,ab.
27. decreas*.ti,ab.
28. deprescrib*.ti,ab.
29. de-prescrib*.ti,ab.
30. eliminat*.ti,ab.
31. substitut*.ti,ab.
32. reduc*.ti,ab.
33. exp Antidepressive Agents/
34. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32
35. 33 and 34
36. exp Behavioral Symptoms/
37. BPSD.ti,ab.
38. (behavio?ral and psychological symptom*).ti,ab.
39. non-cognitive symptom*.ti,ab.
40. aber?ant motor behavio?r.ti,ab.
41. agitat*.ti,ab.
42. aggress*.ti,ab.
43. delusion*.ti,ab.
44. depress*.ti,ab.
45. disruptive.ti,ab.
46. euphoria.ti,ab.
47. hallucination*.ti,ab.
48. irritabil*.ti,ab.
49. labil*.ti,ab.
50. mood.ti,ab.
51. defiant.ti,ab.
52. psychosis.ti,ab.
53. restlessness.ti,ab.
54. sociopathy.ti,ab.
55. sleep.ti,ab.
56. verbal hostility.ti,ab.
57. violence.ti,ab.
58. wandering.ti,ab.
59. hoarding.ti,ab.
60. screaming.ti,ab.
61. vocali?ation.ti,ab.
62. disinhibition.ti,ab.
63. sundown*.ti,ab.
64. responsive behavio?r*.ti,ab.
65. anxiety.ti,ab.
66. apathy.ti,ab.
67. neuropsychiatric symptom*.ti,ab.
68. changed behavio?r*.ti,ab.
69. Mortality/

70. Caregivers/
71. Morbidity/
72. "Quality of Life"/
73. Patient Satisfaction/
74. death.ti,ab.
75. Mortality.ti,ab.
76. side effect*.ti,ab.
77. adverse effect*.ab,ti.
78. adverse event*.ti,ab.
79. harm*.ab,ti.
80. safety.ab,ti.
81. Caregiv* burden.ti,ab.
82. carer* burden.ti,ab.
83. Quality of Life.ti,ab.
84. dying.ti,ab.
85. undesirable effects.ti,ab.
86. harmful effects.ti,ab.
87. adverse drug reaction*.ti,ab.
88. serious adverse event*.ti,ab.
89. "health resource use".ti,ab.
90. "resident satisfaction".ti,ab.
91. 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90
92. (systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
93. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
94. "review* of reviews".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
95. meta-analy*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
96. metaanaly*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
97. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
98. "research evidence".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
99. metasynthe*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
100. exp Review Literature as Topic/
101. exp Review/
102. Meta-Analysis as Topic/
103. Meta-Analysis/
104. "systematic review"/
105. 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104
106. "randomized controlled trial".pt.
107. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
108. (retraction of publication or retracted publication).pt.
109. 106 or 107 or 108
110. (animals not humans).sh.
111. ((comment or editorial or meta-analysis or practice-guideline or review or letter or journal correspondence) not "randomized controlled trial").pt.
112. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not "randomized controlled trial".pt.
113. 109 not (110 or 111 or 112)
114. 105 or 113
115. 18 and 35 and 91
116. 114 and 115
117. limit 116 to english language

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. deprescription/
20. discontinu*.ti,ab.
21. withdraw*.ti,ab.
22. cessat*.ti,ab.
23. reduc*.ab,ti.
24. reduct*.ti,ab.
25. taper*.ti,ab.
26. stop*.ti,ab.
27. deprescribing.ti,ab.
28. ceas*.ti,ab.
29. decreas*.ti,ab.
30. deprescrib*.ti,ab.
31. de-prescrib*.ti,ab.
32. deprescription.ti,ab.
33. eliminat*.ti,ab.
34. substitut*.ti,ab.
35. exp antidepressant agent/
36. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34
37. 35 and 36
38. exp Behavioral Symptoms/
39. BPSD.ti,ab.
40. (behavio?ral and psychological symptom*).ti,ab.
41. non-cognitive symptom*.ti,ab.
42. ab?er?ant motor behaviour.ti,ab.
43. agitat*.ti,ab.
44. aggress*.ti,ab.
45. delusion*.ti,ab.
46. disruptive.ti,ab.
47. euphoria.ti,ab.
48. hallucination*.ti,ab.
49. irritabil*.ti,ab.
50. labil*.ti,ab.
51. mood.ti,ab.
52. defiant.ti,ab.
53. psychosis.ti,ab.
54. restlessness.ti,ab.
55. sociopathy.ti,ab.
56. sleep.ti,ab.
57. verbal hostility.ti,ab.
58. violence.ti,ab.
59. wandering.ti,ab.
60. hoarding.ti,ab.
61. screaming.ti,ab.
62. vocali?ation.ti,ab.
63. disinhibition.ti,ab.
64. sundown*.ti,ab.
65. responsive behavio?r*.ti,ab.
66. anxiety.ti,ab.
67. apathy.ti,ab.
68. changed behavio?r*.ti,ab.
69. Mortality/
70. Caregivers/
71. "Quality of Life"/

72. Patient Satisfaction/
73. resident satisfaction.ti,ab.
74. "health resource use".ti,ab.
75. Mortality.ti,ab.
76. side effect*.ti,ab.
77. adverse effect*.ab,ti.
78. adverse event*.ti,ab.
79. harm*.ab,ti.
80. safety.ab,ti.
81. Caregiv* burden.ti,ab.
82. carer* burden.ti,ab.
83. Quality of Life.ti,ab.
84. dying.ti,ab.
85. undesirable effects.ti,ab.
86. harmful effects.ti,ab.
87. adverse drug reaction*.ti,ab.
88. serious adverse event*.ti,ab.
89. adverse drug reaction/ or adverse event/
90. 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89
91. 18 and 37 and 90
92. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
93. "review* of reviews".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
94. meta-analy*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
95. metaanaly*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
96. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
97. "research evidence".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
98. metasynthe*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
99. meta-synthe*.tw.
100. systematic review/
101. "systematic review (topic)"/
102. meta analysis/
103. "meta analysis (topic)"/
104. 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103
105. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
106. RETRACTED ARTICLE/
107. 105 or 106
108. (animal$ not human$).sh,hw.
109. (book or conference paper or editorial or letter or review).pt. not exp randomized controlled trial/
110. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not exp randomized controlled trial/
111. 107 not (108 or 109 or 110)
112. 104 or 111
113. 91 and 112
114. limit 113 to english language

Discontinuation of Antidepressants - PSYCHINFO

1. exp Dementia/
2. dement*.mp.
3. alzheimer*.mp.
4. (lewy* adj2 bod*).mp.
5. (chronic adj2 cerebrovascular).mp.
6. ("organic brain disease" or "organic brain syndrome").mp.
7. ("normal pressure hydrocephalus" and "shunt*").mp.
8. "benign senescent forgetfulness".mp.
9. (cerebr* adj2 deteriorat*).mp.
10. (cerebral* adj2 insufficient*).mp.
11. (pick* adj2 disease).mp.
12. (creutzfeldt or jcd or cjd).mp.

13. huntington*.mp.
14. binswanger*.mp.
15. korsako*.mp.
16. exp Wernicke's Syndrome/
17. exp Huntingtons Disease/
18. exp Cognitive Impairment/
19. exp Kluver Bucy Syndrome/
20. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. Deprescription.ti,ab.
22. discontinu*.ti,ab.
23. withdraw*.ti,ab.
24. cessat*.ti,ab.
25. taper*.ti,ab.
26. stop*.ti,ab.
27. reduc*.ti,ab.
28. deprescribing.ti,ab.
29. ceas*.ti,ab.
30. decreas*.ti,ab.
31. deprescrib*.ti,ab.
32. de-prescrib*.ti,ab.
33. deprescription.ti,ab.
34. eliminat*.ti,ab.
35. substitut*.ti,ab.
36. exp Tricyclic Antidepressant Drugs/ or exp Antidepressant Drugs/
37. 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35
38. 36 and 37
39. Behavior Problems/
40. Aggressive Behavior/
41. Psychiatric Symptoms/
42. Mental Disorders/
43. Sleep Wake Disorders/
44. Wandering Behavior/
45. Antisocial Behavior/
46. BPSD.ti,ab.
47. (behavio?ral and psychological symptom*).ti,ab.
48. non-cognitive symptom*.ti,ab.
49. aber?ant motor behavio?r.ti,ab.
50. agitat*.ti,ab.
51. delusion*.ti,ab.
52. aggress*.ti,ab.
53. depress*.ti,ab.
54. disruptive.ti,ab.
55. euphoria.ti,ab.
56. hallucination*.ti,ab.
57. irritabil*.ti,ab.
58. labil*.ti,ab.
59. mood.ti,ab.
60. defiant.ti,ab.
61. psychosis.ti,ab.
62. restlessness.ti,ab.
63. sociopathy.ti,ab.
64. sleep.ti,ab.
65. verbal hostility.ti,ab.
66. violence.ti,ab.
67. wandering.ti,ab.
68. hoarding.ti,ab.
69. screaming.ti,ab.
70. vocali?ation.ti,ab.
71. disinhibition.ti,ab.
72. sundown*.ti,ab.
73. responsive behavio?r*.ti,ab.
74. anxiety.ti,ab.
75. apathy.ti,ab.
76. neuropsychiatric symptoms.ti,ab.
77. changed behavio?r*.ti,ab.
78. Mortality/
79. Caregivers/
80. "Quality of Life"/
81. Patient Satisfaction/
82. Mortality.ti,ab.
83. side effect*.ti,ab.
84. adverse effect*.ti,ab.
85. adverse event*.ti,ab.

86.	harm*.ti,ab.
87.	safety.ti,ab.
88.	Caregiv* burden.ti,ab.
89.	carer* burden.ti,ab.
90.	Quality of Life.ti,ab.
91.	dying.ti,ab.
92.	undesirable effects.ti,ab.
93.	harmful effects.ti,ab.
94.	adverse drug reaction*.ti,ab.
95.	serious adverse event*.ti,ab.
96.	"Side Effects (Treatment)"/
97.	"Side Effects (Drug)"/
98.	"health resource use".ti,ab.
99.	resident satisfaction.ti,ab.
100.	39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99
101.	20 and 38 and 100
102.	(systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
103.	((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
104.	"review* of reviews".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
105.	meta-analy*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
106.	metaanaly*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
107.	((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
108.	"research evidence".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
109.	metasynthe*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
110.	exp Review/
111.	Meta-Analysis/
112.	"systematic review"/
113.	double-blind.tw.
114.	randomised.mp.
115.	randomized.tw.
116.	randomly assigned.tw.
117.	113 or 114 or 115 or 116
118.	102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112
119.	117 or 118
120.	101 and 119
121.	limit 120 to english language

Discontinuation of Antidepressants - CINHAL

#	**Query**
S125	S116 AND S124
S124	S11 AND S81 AND S123
S123	S23 AND S122
S122	S117 OR S118 OR S119 OR S120 OR S121
S121	(MH "Antidepressive Agents+")
S120	(MH "Antidepressive Agents, Tricyclic+")
S119	(MH "Antidepressive Agents, Second Generation+")
S118	(MH "Monoamine Oxidase Inhibitors+")
S117	(MH "Serotonin Uptake Inhibitors+")
S116	S92 OR S115
S115	S112 NOT S114
S114	S113 NOT S93
S113	S94 OR S95 OR S96
S112	S97 OR S98 OR S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110 OR S111
S111	MH randomized controlled trials
S110	MH double-blind studies
S109	MH single-blind studies
S108	MH random assignment
S107	MH pretest-posttest design

S106	MH cluster sample
S105	TI (randomised OR randomized)
S104	AB (random*)
S103	TI (trial)
S102	MH (sample size) AND AB (assigned OR allocated OR control)
S101	MH (placebos)
S100	PT (randomized controlled trial)
S99	AB (control W5 group)
S98	MH (crossover design) OR MH (comparative studies)
S97	AB (cluster W3 RCT)
S96	MH animals+
S95	MH (animal studies)
S94	TI (animal model*)
S93	MH (human)
S92	S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88 OR S89 OR S90 OR S91
S91	TX systematic review or meta-analysis
S90	MH systematic review
S89	meta-analysis or systematic review
S88	exp Review Literature as Topic/
S87	TX metasynthe*
S86	TX "research evidence"
S85	TX metaanaly*
S84	TX meta-analy*
S83	"review* of reviews"
S82	TX (systematic or state-of-the-art or scoping or literature or umbrella)
S81	S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79 OR S80
S80	MH Mortality
S79	TI Mortality AND AB Mortality
S78	(MH "Adverse Drug Event+")
S77	TI side effect* AND AB side effect*
S76	TI adverse effect* AND AB adverse effect*
S75	TI adverse event* AND AB adverse event*
S74	TI harm* AND AB harm*
S73	TI safety AND AB safety
S72	(MH "Caregiver Burden")
S71	TI Care* Burden AND AB Care* Burden
S70	MH Quality of Life
S69	TI Quality of Life AND AB Quality of Life
S68	MH Patient Satisfaction
S67	TI Patient Satisfaction AND AB Patient Satisfaction
S66	TI "resident satisfaction" AND AB "resident satisfaction"
S65	TI health resource use AND AB health resource use
S64	TI health resource utilization AND AB health resource utilization
S63	MH health resource utilization
S62	TI "serious adverse event" AND AB "serious adverse event"
S61	TI death AND AB death
S60	TI dying AND AB dying
S59	TI undesirable effects AND AB undesirable effects
S58	TI harmful effects AND AB harmful effects
S57	(MH "Behavioral Symptoms+")
S56	TI (behavio?ral and psychological symptoms of dementia') AND AB ('behavio?ral and psychological symptoms of dementia')
S55	TI neuropsychiatric symptoms AND AB neuropsychiatric symptoms
S54	TI challenging behaviour AND AB challenging behaviour
S53	AB "non-cognitive symptoms" AND TI "non-cognitive symptoms"
S52	TI bpsd AND AB bpsd
S51	TI "aber?ant motor behavio?r" AND AB "aber?ant motor behavio?r"
S50	TI "aberrant motor behaviour" AND AB "aberrant motor behaviour"
S49	TI agitat* AND AB agitat*
S48	TI aggress* AND AB aggress*
S47	TI delusion* AND AB delusion*
S46	TI depress* AND AB depress*
S45	TI disruptive AND AB disruptive
S44	TI euphoria AND AB euphoria
S43	TI hallucination* AND AB hallucination*
S42	TI irritabil* AND AB irritabil*
S41	AB labil* AND TI labil*
S40	TI mood AND AB mood
S39	TI defiant AND AB defiant

S38	TI psychosis AND AB psychosis
S37	TI restlessness AND AB restlessness
S36	TI sociopathy AND AB sociopathy
S35	TI sleep AND AB sleep
S34	TI verbal hostility AND AB verbal hostility
S33	TI violence AND AB violence
S32	TI wandering AND AB wandering
S31	TI hoarding AND AB hoarding
S30	TI screaming AND AB screaming
S29	TI vocali?ation AND AB vocali?ation
S28	TI disinhibition AND AB disinhibition
S27	TI sundown* AND AB sundown*
S26	TI responsive behavio?r* AND AB responsive behavio?r*
S25	TI anxiety AND AB anxiety
S24	TI apathy AND AB apathy
S23	S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22
S22	TI eliminat* AND AB eliminat*
S21	TI substitut* AND AB substitut*
S20	TI decreas* AND AB decreas*
S19	TI De-prescri* AND AB De-prescri*
S18	TI Deprescri* AND AB Deprescri*
S17	TI discontinu* AND AB discontinu*
S16	TI withdraw* AND AB withdraw*
S15	TI cessat* AND AB cessat*
S14	TI reduc* AND AB reduc*
S13	TI taper* AND AB taper*
S12	TI stop* AND AB stop*
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10
S10	("Dementia")
S9	(MH "Dementia+")
S8	(MH "Dementia, Vascular+")
S7	(MH "Delirium, Dementia, Amnestic, Cognitive Disorders+")
S6	(MH "Dementia, Multi-Infarct")
S5	(MH "Dementia, Presenile+")
S4	(MH "Dementia, Senile+")
S3	("Alzheimer Disease")
S2	(MH "Alzheimer's Disease")
S1	"Lewy Body Disease"

Discontinuation of Antidepressants - CENTRAL

#1	MeSH descriptor: [Dementia] explode all trees
#2	MeSH descriptor: [Wernicke Encephalopathy] this term only
#3	MeSH descriptor: [Neurocognitive Disorders] explode all trees
#4	dement*
#5	alzheimer*
#6	(lewy* adj2 bod*)
#7	(chronic adj2 cerebrovascular)
#8	("organic brain disease" or "organic brain syndrome")
#9	("normal pressure hydrocephalus" and "shunt*")
#10	"benign senescent forgetfulness"
#11	(cerebr* adj2 deteriorat*)
#12	(cerebral* adj2 insufficient*)
#13	(pick* adj2 disease)
#14	(creutzfeldt or jcd or cjd)
#15	huntington*
#16	binswanger*
#17	korsako*
#18	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17
#42	MeSH descriptor: [Behavioral Symptoms] explode all trees
#43	BPSD
#44	behavio?ral and psychological symptom*
#45	non-cognitive symptom*
#46	aber?ant motor behavio?r
#47	agitat*
#48	aggress*
#49	delusion*
#50	depress*
#51	disruptive
#52	euphoria

#53 hallucination*
#54 irritabil*
#55 labil*
#56 mood
#57 defiant
#58 psychosis
#59 restlessness
#60 sociopathy
#61 sleep
#62 verbal hostility
#63 violence
#64 wandering
#65 hoarding
#66 screaming
#67 vocali?ation
#68 disinhibition
#69 sundown*
#70 responsive behavio?r*
#71 anxiety
#72 apathy
#73 neuropsychiatric symptom*
#74 changed behavio?r
#75 MeSH descriptor: [Mortality] explode all trees
#76 MeSH descriptor: [Caregivers] explode all trees9
#77 MeSH descriptor: [Quality of Life] explode all trees
#78 MeSH descriptor: [Patient Satisfaction] explode all trees
#79 death
#80 Mortality
#81 side effect*
#82 MeSH descriptor: [Drug-Related Side Effects and Adverse Reactions] explode all trees
#83 adverse effect*
#84 adverse event*
#85 harm*
#86 safety
#87 Caregiv* burden
#88 carer* burden
#89 Quality of Life
#90 dying
#91 undesirable effects
#92 harmful effects
#93 adverse drug reaction*
#94 serious adverse event*
#95 MeSH descriptor: [Prevalence] this term only
#96 prevalence:ti,ab
#97 #42 Or #43 OR #44 OR #45 OR #46 OR #47 Or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68 or #69 or #70 or #71 or #72 or #73 or #74 or #75 or #76 or #77 or #78 or #79 or #80 or #81 or #82 or #83 or #84 or #85 or #86 or #87 or #88 or #89 or #90 or #91 or #92 or #93 or #94 or #95 or #96
#101 Deprescriptions
#102 discontinu*
#103 withdraw*
#104 cessat*
#105 reduc*
#106 taper*
#107 stop*
#108 ceas*
#109 decreas*
#110 deprescrib*
#111 de-prescrib*
#112 deprescription
#113 eliminat*
#114 substitut*
#115 #101 or #102 OR #103 or #104 OR #105 OR #106 OR #107 OR #108 OR #109 OR #110 OR #111 OR #112 OR #113 OR #114
#169 MeSH descriptor: [Antidepressive Agents] explode all trees
#172 MeSH descriptor: [Monoamine Oxidase Inhibitors] explode all trees
#176 MeSH descriptor: [Antidepressive Agents, Second-Generation] explode all trees
#178 MeSH descriptor: [Antidepressive Agents, Tricyclic] explode all trees
#188 MeSH descriptor: [Serotonin Uptake Inhibitors] explode all trees
#197 MeSH descriptor: [Serotonin and Noradrenaline Reuptake Inhibitors] explode all trees
#210 #169 OR #172 OR #176 OR #178 OR #188 OR #197
#211 #115 AND #210
#213 #18 AND #211 AND #97

PRN use of Benzodiazepines and Antipsychotics

In people with dementia and changed behaviours, what are the risks and benefits of pro re nata (PRN) antipsychotic use compared to regular antipsychotic use?
In people with dementia and changed behaviours, what are the risks and benefits of pro re nata (PRN) benzodiazepine use compared to regular benzodiazepine use?

PRN of Benzodiazepines - Medline

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. PRN.ti,ab.
20. "pro re nata".ti,ab.
21. regular*.ti,ab.
22. ongoing.ti,ab.
23. "intermittent".ti,ab.
24. "continuous".ti,ab.
25. "when required".ti,ab.
26. when needed.ti,ab.
27. when necessary.ti,ab.
28. as required.ti,ab.
29. as needed.ti,ab.
30. as necessary.ti,ab.
31. exp Benzodiazepines/
32. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30
33. 31 and 32
34. exp Behavioral Symptoms/
35. BPSD.ti,ab.
36. (behavio?ral and psychological symptom*).ti,ab.
37. non-cognitive symptom*.ti,ab.
38. aber?ant motor behavio?r.ti,ab.
39. agitat*.ti,ab.
40. aggress*.ti,ab.
41. delusion*.ti,ab.
42. depress*.ti,ab.
43. disruptive.ti,ab.
44. euphoria.ti,ab.
45. hallucination*.ti,ab.
46. irritabil*.ti,ab.
47. labil*.ti,ab.
48. mood.ti,ab.
49. defiant.ti,ab.
50. psychosis.ti,ab.
51. restlessness.ti,ab.
52. sociopathy.ti,ab.
53. sleep.ti,ab.
54. verbal hostility.ti,ab.
55. violence.ti,ab.
56. wandering.ti,ab.
57. hoarding.ti,ab.
58. screaming.ti,ab.
59. vocali?ation.ti,ab.
60. disinhibition.ti,ab.
61. sundown*.ti,ab.
62. responsive behavio?r*.ti,ab.

63. anxiety.ti,ab.
64. apathy.ti,ab.
65. neuropsychiatric symptom*.ti,ab.
66. changed behavio?r*.ti,ab.
67. Mortality/
68. Caregivers/
69. "Quality of Life"/
70. Patient Satisfaction/
71. death.ti,ab.
72. Mortality.ti,ab.
73. side effect*.ti,ab.
74. adverse effect*.ab,ti.
75. adverse event*.ti,ab.
76. harm*.ab,ti.
77. safety.ab,ti.
78. Caregiv* burden.ti,ab.
79. carer* burden.ti,ab.
80. Quality of Life.ti,ab.
81. dying.ti,ab.
82. undesirable effects.ti,ab.
83. harmful effects.ti,ab.
84. adverse drug reaction*.ti,ab.
85. serious adverse event*.ti,ab.
86. "health resource use".ti,ab.
87. "resident satisfaction".ti,ab.
88. Health Resources/
89. 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88
90. 18 and 33 and 89
91. (systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
92. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
93. "review* of reviews".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
94. meta-analy*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
95. metaanaly*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
96. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
97. "research evidence".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
98. metasynthe*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
99. exp Review Literature as Topic/
100. exp Review/
101. Meta-Analysis as Topic/
102. Meta-Analysis/
103. "systematic review"/
104. 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103
105. "randomized controlled trial".pt.
106. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
107. (retraction of publication or retracted publication).pt.
108. 105 or 106 or 107
109. (animals not humans).sh.
110. ((comment or editorial or meta-analysis or practice-guideline or review or letter or journal correspondence) not "randomized controlled trial").pt.
111. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not "randomized controlled trial".pt.
112. 108 not (109 or 110 or 111)

113. 104 or 112
114. 90 and 113
115. limit 114 to english language

PRN of Benzodiazepines - EMBASE

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. PRN.ti,ab.
20. "pro re nata".ti,ab.
21. regular*.ti,ab.
22. ongoing.ti,ab.
23. "intermittent".ti,ab.
24. "continuous".ti,ab.
25. "when required".ti,ab.
26. "when needed".ti,ab.
27. "when necessary".ti,ab.
28. "where required".ti,ab.
29. "where needed".ti,ab.
30. "where necessary".ti,ab.
31. as required.ti,ab.
32. "as needed".ti,ab.
33. "as necessary".ti,ab.
34. exp benzodiazepine/
35. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33
36. 34 and 35
37. exp Behavioral Symptoms/
38. BPSD.ti,ab.
39. (behavio?ral and psychological symptom*).ti,ab.
40. non-cognitive symptom*.ti,ab.
41. ab?er?ant motor behaviour.ti,ab.
42. agitat*.ti,ab.
43. aggress*.ti,ab.
44. delusion*.ti,ab.
45. disruptive.ti,ab.
46. euphoria.ti,ab.
47. hallucination*.ti,ab.
48. irritabil*.ti,ab.
49. labil*.ti,ab.
50. mood.ti,ab.
51. defiant.ti,ab.
52. psychosis.ti,ab.
53. restlessness.ti,ab.
54. sociopathy.ti,ab.
55. sleep.ti,ab.
56. verbal hostility.ti,ab.
57. violence.ti,ab.
58. wandering.ti,ab.
59. hoarding.ti,ab.
60. screaming.ti,ab.
61. vocali?ation.ti,ab.
62. disinhibition.ti,ab.
63. sundown*.ti,ab.
64. responsive behavio?r*.ti,ab.
65. anxiety.ti,ab.
66. apathy.ti,ab.
67. changed behavio?r*.ti,ab.

68. Mortality/
69. Caregivers/
70. "Quality of Life"/
71. Patient Satisfaction/
72. resident satisfaction.ti,ab.
73. "health resource use".ti,ab.
74. Mortality.ti,ab.
75. side effect*.ti,ab.
76. adverse effect*.ab,ti.
77. adverse event*.ti,ab.
78. harm*.ab,ti.
79. safety.ab,ti.
80. Caregiv* burden.ti,ab.
81. carer* burden.ti,ab.
82. Quality of Life.ti,ab.
83. dying.ti,ab.
84. undesirable effects.ti,ab.
85. harmful effects.ti,ab.
86. adverse drug reaction*.ti,ab.
87. serious adverse event*.ti,ab.
88. adverse drug reaction/ or adverse event/
89. 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88
90. 18 and 36 and 89
91. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
92. "review* of reviews".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
93. meta-analy*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
94. metaanaly*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
95. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
96. "research evidence".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
97. metasynthe*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
98. meta-synthe*.tw.
99. systematic review/
100. "systematic review (topic)"/
101. meta analysis/
102. "meta analysis (topic)"/
103. 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102
104. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
105. RETRACTED ARTICLE/
106. 104 or 105
107. (animal$ not human$).sh,hw.
108. (book or conference paper or editorial or letter or review).pt. not exp randomized controlled trial/
109. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not exp randomized controlled trial/
110. 106 not (107 or 108 or 109)
111. 103 or 110
112. 90 and 111
113. limit 112 to english language

PRN of Benzodiazepines - PSYCHINFO

1. exp Dementia/
2. dement*.mp.
3. alzheimer*.mp.
4. (lewy* adj2 bod*).mp.
5. (chronic adj2 cerebrovascular).mp.
6. ("organic brain disease" or "organic brain syndrome").mp.
7. ("normal pressure hydrocephalus" and "shunt*").mp.
8. "benign senescent forgetfulness".mp.
9. (cerebr* adj2 deteriorat*).mp.
10. (cerebral* adj2 insufficient*).mp.

11. (pick* adj2 disease).mp.
12. (creutzfeldt or jcd or cjd).mp.
13. huntington*.mp.
14. binswanger*.mp.
15. korsako*.mp.
16. exp Wernicke's Syndrome/
17. exp Huntingtons Disease/
18. exp Cognitive Impairment/
19. exp Kluver Bucy Syndrome/
20. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. PRN.ti,ab.
22. "pro re nata".ti,ab.
23. "Prescribing (Drugs)"/
24. regular*.ti,ab.
25. ongoing.ti,ab.
26. "intermittent".ti,ab.
27. "continuous".ti,ab.
28. "when required".ti,ab.
29. "when needed".ti,ab.
30. when necessary.ti,ab.
31. where required.ti,ab.
32. where needed.ti,ab.
33. where necessary.ti,ab.
34. as required.ti,ab.
35. as needed.ti,ab.
36. as necessary.ti,ab.
37. exp Benzodiazepines/
38. 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36
39. 37 and 38
40. Behavior Problems/
41. Aggressive Behavior/
42. Psychiatric Symptoms/
43. Mental Disorders/
44. Sleep Wake Disorders/
45. Wandering Behavior/
46. Antisocial Behavior/
47. BPSD.ti,ab.
48. (behavio?ral and psychological symptom*).ti,ab.
49. non-cognitive symptom*.ti,ab.
50. aber?ant motor behavio?r.ti,ab.
51. agitat*.ti,ab.
52. delusion*.ti,ab.
53. aggress*.ti,ab.
54. depress*.ti,ab.
55. disruptive.ti,ab.
56. euphoria.ti,ab.
57. hallucination*.ti,ab.
58. irritabil*.ti,ab.
59. labil*.ti,ab.
60. mood.ti,ab.
61. defiant.ti,ab.
62. psychosis.ti,ab.
63. restlessness.ti,ab.
64. sociopathy.ti,ab.
65. sleep.ti,ab.
66. verbal hostility.ti,ab.
67. violence.ti,ab.
68. wandering.ti,ab.
69. hoarding.ti,ab.
70. screaming.ti,ab.
71. vocali?ation.ti,ab.
72. disinhibition.ti,ab.
73. sundown*.ti,ab.
74. responsive behavio?r*.ti,ab.
75. anxiety.ti,ab.
76. apathy.ti,ab.
77. neuropsychiatric symptoms.ti,ab.
78. changed behavio?r*.ti,ab.
79. Mortality/
80. Caregivers/
81. "Quality of Life"/
82. Patient Satisfaction/
83. Mortality.ti,ab.

84.	side effect*.ti,ab.
85.	adverse effect*.ti,ab.
86.	adverse event*.ti,ab.
87.	harm*.ti,ab.
88.	safety.ti,ab.
89.	Caregiv* burden.ti,ab.
90.	carer* burden.ti,ab.
91.	Quality of Life.ti,ab.
92.	dying.ti,ab.
93.	undesirable effects.ti,ab.
94.	harmful effects.ti,ab.
95.	adverse drug reaction*.ti,ab.
96.	serious adverse event*.ti,ab.
97.	"Side Effects (Treatment)"/
98.	"Side Effects (Drug)"/
99.	"health resource use".ti,ab.
100.	resident satisfaction.ti,ab.
101.	40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100
102.	20 and 39 and 101
103.	(systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
104.	((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
105.	"review* of reviews".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
106.	meta-analy*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
107.	metaanaly*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
108.	((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
109.	"research evidence".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
110.	metasynthe*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
111.	exp Review/
112.	Meta-Analysis/
113.	"systematic review"/
114.	double-blind.tw.
115.	randomised.mp.
116.	randomized.tw.
117.	randomly assigned.tw.
118.	114 or 115 or 116 or 117
119.	104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113
120.	118 or 119
121.	102 and 120
122.	limit 121 to english language

PRN of Benzodiazepines - CINHAL

#	**Query**
S119	S115 AND S118
S118	S11 AND S80 AND S117
S117	S22 AND S116
S116	(MH "Antianxiety Agents, Benzodiazepine+")
S115	S91 OR S114
S114	S111 NOT S113
S113	S112 NOT S92
S112	S93 OR S94 OR S95
S111	S96 OR S97 OR S98 OR S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110
S110	MH randomized controlled trials
S109	MH double-blind studies
S108	MH single-blind studies
S107	MH random assignment
S106	MH pretest-posttest design
S105	MH cluster sample
S104	TI (randomised OR randomized)
S103	AB (random*)

S102	TI (trial)
S101	MH (sample size) AND AB (assigned OR allocated OR control)
S100	MH (placebos)
S99	PT (randomized controlled trial)
S98	AB (control W5 group)
S97	MH (crossover design) OR MH (comparative studies)
S96	AB (cluster W3 RCT)
S95	MH animals+
S94	MH (animal studies)
S93	TI (animal model*)
S92	MH (human)
S91	S81 OR S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88 OR S89 OR S90
S90	TX systematic review or meta-analysis
S89	MH systematic review
S88	meta-analysis or systematic review
S87	exp Review Literature as Topic/
S86	TX metasynthe*
S85	TX "research evidence"
S84	TX metaanaly*
S83	TX meta-analy*
S82	"review* of reviews"
S81	TX (systematic or state-of-the-art or scoping or literature or umbrella)
S80	S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79
S79	MH Mortality
S78	TI Mortality AND AB Mortality
S77	(MH "Adverse Drug Event+")
S76	TI side effect* AND AB side effect*
S75	TI adverse effect* AND AB adverse effect*
S74	TI adverse event* AND AB adverse event*
S73	TI harm* AND AB harm*
S72	TI safety AND AB safety
S71	(MH "Caregiver Burden")
S70	TI Care* Burden AND AB Care* Burden
S69	MH Quality of Life
S68	TI Quality of Life AND AB Quality of Life
S67	MH Patient Satisfaction
S66	TI Patient Satisfaction AND AB Patient Satisfaction
S65	TI "resident satisfaction" AND AB "resident satisfaction"
S64	TI health resource use AND AB health resource use
S63	TI health resource utilization AND AB health resource utilization
S62	MH health resource utilization
S61	TI "serious adverse event" AND AB "serious adverse event"
S60	TI death AND AB death
S59	TI dying AND AB dying
S58	TI undesirable effects AND AB undesirable effects
S57	TI harmful effects AND AB harmful effects
S56	(MH "Behavioral Symptoms+")
S55	TI (behavio?ral and psychological symptoms of dementia') AND AB ('behavio?ral and psychological symptoms of dementia')
S54	TI neuropsychiatric symptoms AND AB neuropsychiatric symptoms
S53	TI challenging behaviour AND AB challenging behaviour
S52	AB "non-cognitive symptoms" AND TI "non-cognitive symptoms"
S51	TI bpsd AND AB bpsd
S50	TI "aber?ant motor behavio?r" AND AB "aber?ant motor behavio?r"
S49	TI "aberrant motor behaviour" AND AB "aberrant motor behaviour"
S48	TI agitat* AND AB agitat*
S47	TI aggress* AND AB aggress*
S46	TI delusion* AND AB delusion*
S45	TI depress* AND AB depress*
S44	TI disruptive AND AB disruptive
S43	TI euphoria AND AB euphoria
S42	TI hallucination* AND AB hallucination*
S41	TI irritabil* AND AB irritabil*
S40	AB labil* AND TI labil*
S39	TI mood AND AB mood
S38	TI defiant AND AB defiant
S37	TI psychosis AND AB psychosis
S36	TI restlessness AND AB restlessness

S35	TI sociopathy AND AB sociopathy
S34	TI sleep AND AB sleep
S33	TI verbal hostility AND AB verbal hostility
S32	TI violence AND AB violence
S31	TI wandering AND AB wandering
S30	TI hoarding AND AB hoarding
S29	TI screaming AND AB screaming
S28	TI vocali?ation AND AB vocali?ation
S27	TI disinhibition AND AB disinhibition
S26	TI sundown* AND AB sundown*
S25	TI responsive behavio?r* AND AB responsive behavio?r*
S24	TI anxiety AND AB anxiety
S23	TI apathy AND AB apathy
S22	S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21
S21	TI PRN AND AB PRN
S20	TI "pro re nata" AND AB "pro re nata"
S19	TI regular* AND AB regular*
S18	TI ongoing AND AB ongoing
S17	TI "intermittent" AND AB "intermittent"
S16	TI "continuous" AND AB "continuous"
S15	TI when needed AND AB when needed
S14	TX when necessary
S13	TI "as needed" AND AB "as needed"
S12	TI "as necessary" AND AB "as necessary"
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10
S10	("Dementia")
S9	(MH "Dementia+")
S8	(MH "Dementia, Vascular+")
S7	(MH "Delirium, Dementia, Amnestic, Cognitive Disorders+")
S6	(MH "Dementia, Multi-Infarct")
S5	(MH "Dementia, Presenile+")
S4	(MH "Dementia, Senile+")
S3	("Alzheimer Disease")
S2	(MH "Alzheimer's Disease")
S1	"Lewy Body Disease"

PRN of Benzodiazepines - CENTRAL

#1	MeSH descriptor: [Dementia] explode all trees
#2	MeSH descriptor: [Wernicke Encephalopathy] this term only
#3	MeSH descriptor: [Neurocognitive Disorders] explode all trees
#4	dement*
#5	alzheimer*
#6	(lewy* adj2 bod*)
#7	(chronic adj2 cerebrovascular)
#8	("organic brain disease" or "organic brain syndrome")
#9	("normal pressure hydrocephalus" and "shunt*")
#10	"benign senescent forgetfulness"
#11	(cerebr* adj2 deteriorat*)
#12	(cerebral* adj2 insufficient*)
#13	(pick* adj2 disease)
#14	(creutzfeldt or jcd or cjd)
#15	huntington*
#16	binswanger*
#17	korsako*
#18	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17
#42	MeSH descriptor: [Behavioral Symptoms] explode all trees
#43	BPSD
#44	behavio?ral and psychological symptom*
#45	non-cognitive symptom*
#46	aber?ant motor behavio?r
#47	agitat*
#48	aggress*
#49	delusion*
#50	depress*
#51	disruptive
#52	euphoria
#53	hallucination*
#54	irritabil*
#55	labil*

#56 mood
#57 defiant
#58 psychosis
#59 restlessness
#60 sociopathy
#61 sleep
#62 verbal hostility
#63 violence
#64 wandering
#65 hoarding
#66 screaming
#67 vocali?ation
#68 disinhibition
#69 sundown*
#70 responsive behavio?r*
#71 anxiety
#72 apathy
#73 neuropsychiatric symptom*
#74 changed behavio?r
#75 MeSH descriptor: [Mortality] explode all trees
#76 MeSH descriptor: [Caregivers] explode all trees9
#77 MeSH descriptor: [Quality of Life] explode all trees
#78 MeSH descriptor: [Patient Satisfaction] explode all trees
#79 death
#80 Mortality
#81 side effect*
#82 MeSH descriptor: [Drug-Related Side Effects and Adverse Reactions] explode all trees
#83 adverse effect*
#84 adverse event*
#85 harm*
#86 safety
#87 Caregiv* burden
#88 carer* burden
#89 Quality of Life
#90 dying
#91 undesirable effects
#92 harmful effects
#93 adverse drug reaction*
#94 serious adverse event*
#95 MeSH descriptor: [Prevalence] this term only
#96 prevalence:ti,ab
#97 #42 Or #43 OR #44 OR #45 OR #46 OR #47 Or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68 or #69 or #70 or #71 or #72 or #73 or #74 or #75 or #76 or #77 or #78 or #79 or #80 or #81 or #82 or #83 or #84 or #85 or #86 or #87 or #88 or #89 or #90 or #91 or #92 or #93 or #94 or #95 or #96
#146 MeSH descriptor: [Benzodiazepines] explode all trees
#121 PRN
#122 "pro re nata"
#123 regular*
#124 ongoing
#125 "intermittent"
#126 "continuous"
#127 "when required"
#128 when needed
#129 when necessary
#130 as required
#131 as needed
#132 as necessary
#133 #121 OR #122 OR #123 OR #124 OR #125 OR #126 OR #127 OR #128 OR #129 OR #130 OR #131 OR #132
#167 #146 AND #133
#168 #18 AND #167 AND #97

PRN of Antipsychotics - Medline

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.

7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. exp Antipsychotic Agents/
20. PRN.ti,ab.
21. "pro re nata".ti,ab.
22. regular*.ti,ab.
23. ongoing.ti,ab.
24. "intermittent".ti,ab.
25. "continuous".ti,ab.
26. "when required".ti,ab.
27. when needed.ti,ab.
28. when necessary.ti,ab.
29. as required.ti,ab.
30. as needed.ti,ab.
31. as necessary.ti,ab.
32. 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31
33. 19 and 32
34. exp Behavioral Symptoms/
35. BPSD.ti,ab.
36. (behavio?ral and psychological symptom*).ti,ab.
37. non-cognitive symptom*.ti,ab.
38. aber?ant motor behavio?r.ti,ab.
39. agitat*.ti,ab.
40. aggress*.ti,ab.
41. delusion*.ti,ab.
42. depress*.ti,ab.
43. disruptive.ti,ab.
44. euphoria.ti,ab.
45. hallucination*.ti,ab.
46. irritabil*.ti,ab.
47. labil*.ti,ab.
48. mood.ti,ab.
49. defiant.ti,ab.
50. psychosis.ti,ab.
51. restlessness.ti,ab.
52. sociopathy.ti,ab.
53. sleep.ti,ab.
54. verbal hostility.ti,ab.
55. violence.ti,ab.
56. wandering.ti,ab.
57. hoarding.ti,ab.
58. screaming.ti,ab.
59. vocali?ation.ti,ab.
60. disinhibition.ti,ab.
61. sundown*.ti,ab.
62. responsive behavio?r*.ti,ab.
63. anxiety.ti,ab.
64. apathy.ti,ab.
65. neuropsychiatric symptom*.ti,ab.
66. Mortality/
67. Caregivers/
68. "Quality of Life"/
69. Patient Satisfaction/
70. death.ti,ab.
71. Mortality.ti,ab.
72. side effect*.ti,ab.
73. adverse effect*.ab,ti.
74. adverse event*.ti,ab.
75. harm*.ab,ti.
76. safety.ab,ti.
77. Caregiv* burden.ti,ab.
78. carer* burden.ti,ab.
79. Quality of Life.ti,ab.

80. dying.ti,ab.
81. undesirable effects.ti,ab.
82. harmful effects.ti,ab.
83. adverse drug reaction*.ti,ab.
84. serious adverse event*.ti,ab.
85. "health resource use".ti,ab.
86. "resident satisfaction".ti,ab.
87. Health Resources/
88. changed behavio?r*.ti,ab.
89. 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88
90. 18 and 33 and 89
91. (systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
92. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
93. "review* of reviews".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
94. meta-analy*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
95. metaanaly*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
96. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
97. "research evidence".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
98. metasynthe*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
99. exp Review Literature as Topic/
100. exp Review/
101. Meta-Analysis as Topic/
102. Meta-Analysis/
103. "systematic review"/
104. 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103
105. "randomized controlled trial".pt.
106. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
107. (retraction of publication or retracted publication).pt.
108. 105 or 106 or 107
109. (animals not humans).sh.
110. ((comment or editorial or meta-analysis or practice-guideline or review or letter or journal correspondence) not "randomized controlled trial").pt.
111. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not "randomized controlled trial".pt.
112. 108 not (109 or 110 or 111)
113. 104 or 112
114. 90 and 113
115. limit 114 to english language

PRN of Antipsychotics - EMBASE

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.

11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. PRN.ti,ab.
20. "pro re nata".ti,ab.
21. regular*.ti,ab.
22. ongoing.ti,ab.
23. "intermittent".ti,ab.
24. "continuous".ti,ab.
25. "when required".ti,ab.
26. "when needed".ti,ab.
27. "when necessary".ti,ab.
28. "where required".ti,ab.
29. "where needed".ti,ab.
30. "where necessary".ti,ab.
31. as required.ti,ab.
32. "as needed".ti,ab.
33. "as necessary".ti,ab.
34. exp neuroleptic agent/
35. exp atypical antipsychotic agent/
36. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33
37. 34 or 35
38. 36 and 37
39. exp Behavioral Symptoms/
40. BPSD.ti,ab.
41. (behavio?ral and psychological symptom*).ti,ab.
42. non-cognitive symptom*.ti,ab.
43. ab?er?ant motor behaviour.ti,ab.
44. agitat*.ti,ab.
45. aggress*.ti,ab.
46. delusion*.ti,ab.
47. disruptive.ti,ab.
48. euphoria.ti,ab.
49. hallucination*.ti,ab.
50. irritabil*.ti,ab.
51. labil*.ti,ab.
52. mood.ti,ab.
53. defiant.ti,ab.
54. psychosis.ti,ab.
55. restlessness.ti,ab.
56. sociopathy.ti,ab.
57. sleep.ti,ab.
58. verbal hostility.ti,ab.
59. violence.ti,ab.
60. wandering.ti,ab.
61. hoarding.ti,ab.
62. screaming.ti,ab.
63. vocali?ation.ti,ab.
64. disinhibition.ti,ab.
65. sundown*.ti,ab.
66. responsive behavio?r*.ti,ab.
67. anxiety.ti,ab.
68. apathy.ti,ab.
69. changed behavio?r*.ti,ab.
70. 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69
71. Mortality/
72. Caregivers/
73. "Quality of Life"/
74. Patient Satisfaction/
75. resident satisfaction.ti,ab.
76. "health resource use".ti,ab.
77. Mortality.ti,ab.
78. side effect*.ti,ab.
79. adverse effect*.ab,ti.
80. adverse event*.ti,ab.
81. harm*.ab,ti.
82. safety.ab,ti.

83. Caregiv* burden.ti,ab.
84. carer* burden.ti,ab.
85. Quality of Life.ti,ab.
86. dying.ti,ab.
87. undesirable effects.ti,ab.
88. harmful effects.ti,ab.
89. adverse drug reaction*.ti,ab.
90. serious adverse event*.ti,ab.
91. adverse drug reaction/ or adverse event/
92. 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91
93. 18 and 38 and 92
94. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
95. "review* of reviews".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
96. meta-analy*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
97. metaanaly*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
98. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
99. "research evidence".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
100. metasynthe*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
101. meta-synthe*.tw.
102. systematic review/
103. "systematic review (topic)"/
104. meta analysis/
105. "meta analysis (topic)"/
106. 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105
107. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
108. RETRACTED ARTICLE/
109. 107 or 108
110. (animal$ not human$).sh,hw.
111. (book or conference paper or editorial or letter or review).pt. not exp randomized controlled trial/
112. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not exp randomized controlled trial/
113. 109 not (110 or 111 or 112)
114. 106 or 113
115. 93 and 114

PRN of Antipsychotics - PSYCHINFO

1. exp Dementia/
2. dement*.mp.
3. alzheimer*.mp.
4. (lewy* adj2 bod*).mp.
5. (chronic adj2 cerebrovascular).mp.
6. ("organic brain disease" or "organic brain syndrome").mp.
7. ("normal pressure hydrocephalus" and "shunt*").mp.
8. "benign senescent forgetfulness".mp.
9. (cerebr* adj2 deteriorat*).mp.
10. (cerebral* adj2 insufficient*).mp.
11. (pick* adj2 disease).mp.
12. (creutzfeldt or jcd or cjd).mp.
13. huntington*.mp.
14. binswanger*.mp.
15. korsako*.mp.
16. exp Wernicke's Syndrome/
17. exp Huntingtons Disease/
18. exp Cognitive Impairment/
19. exp Kluver Bucy Syndrome/
20. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. exp Neuroleptic Drugs/
22. PRN.ti,ab.
23. "pro re nata".ti,ab.
24. "Prescribing (Drugs)"/

25. regular*.ti,ab.
26. ongoing.ti,ab.
27. "intermittent".ti,ab.
28. "continuous".ti,ab.
29. "when required".ti,ab.
30. "when needed".ti,ab.
31. when necessary.ti,ab.
32. where required.ti,ab.
33. where needed.ti,ab.
34. where necessary.ti,ab.
35. as required.ti,ab.
36. as needed.ti,ab.
37. as necessary.ti,ab.
38. 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37
39. 21 and 38
40. Behavior Problems/
41. Aggressive Behavior/
42. Psychiatric Symptoms/
43. Mental Disorders/
44. Sleep Wake Disorders/
45. Wandering Behavior/
46. Antisocial Behavior/
47. BPSD.ti,ab.
48. (behavio?ral and psychological symptom*).ti,ab.
49. non-cognitive symptom*.ti,ab.
50. aber?ant motor behavio?r.ti,ab.
51. agitat*.ti,ab.
52. delusion*.ti,ab.
53. aggress*.ti,ab.
54. depress*.ti,ab.
55. disruptive.ti,ab.
56. euphoria.ti,ab.
57. hallucination*.ti,ab.
58. irritabil*.ti,ab.
59. labil*.ti,ab.
60. mood.ti,ab.
61. defiant.ti,ab.
62. psychosis.ti,ab.
63. restlessness.ti,ab.
64. sociopathy.ti,ab.
65. sleep.ti,ab.
66. verbal hostility.ti,ab.
67. violence.ti,ab.
68. wandering.ti,ab.
69. hoarding.ti,ab.
70. screaming.ti,ab.
71. vocali?ation.ti,ab.
72. disinhibition.ti,ab.
73. sundown*.ti,ab.
74. responsive behavio?r*.ti,ab.
75. anxiety.ti,ab.
76. apathy.ti,ab.
77. neuropsychiatric symptoms.ti,ab.
78. changed behavio?r*.ab,ti.
79. Mortality/
80. Caregivers/
81. "Quality of Life"/
82. Patient Satisfaction/
83. Mortality.ti,ab.
84. side effect*.ti,ab.
85. adverse effect*.ti,ab.
86. adverse event*.ti,ab.
87. harm*.ti,ab.
88. safety.ti,ab.
89. Caregiv* burden.ti,ab.
90. carer* burden.ti,ab.
91. Quality of Life.ti,ab.
92. dying.ti,ab.
93. undesirable effects.ti,ab.
94. harmful effects.ti,ab.
95. adverse drug reaction*.ti,ab.
96. serious adverse event*.ti,ab.
97. "Side Effects (Treatment)"/

98.	"Side Effects (Drug)"/
99.	"health resource use".ti,ab.
100.	resident satisfaction.ti,ab.
101.	40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100
102.	20 and 39 and 101
103.	(systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
104.	((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
105.	"review* of reviews".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
106.	meta-analy*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
107.	metaanaly*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
108.	((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
109.	"research evidence".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
110.	metasynthe*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
111.	exp Review/
112.	Meta-Analysis/
113.	"systematic review"/
114.	double-blind.tw.
115.	randomised.mp.
116.	randomized.tw.
117.	randomly assigned.tw.
118.	114 or 115 or 116 or 117
119.	103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113
120.	118 or 119
121.	102 and 120
122.	limit 121 to english language

PRN of Antipsychotics - CINHAL

#	**Query**
S119	S83 AND S118
S118	S94 OR S117
S117	S114 NOT S116
S116	S115 NOT S95
S115	S96 OR S97 OR S98
S114	S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110 OR S111 OR S112 OR S113
S113	MH randomized controlled trials
S112	MH double-blind studies
S111	MH single-blind studies
S110	MH random assignment
S109	MH pretest-posttest design
S108	MH cluster sample
S107	TI (randomised OR randomized)
S106	AB (random*)
S105	TI (trial)
S104	MH (sample size) AND AB (assigned OR allocated OR control)
S103	MH (placebos)
S102	PT (randomized controlled trial)
S101	AB (control W5 group)
S100	MH (crossover design) OR MH (comparative studies)
S99	AB (cluster W3 RCT)
S98	MH animals+
S97	MH (animal studies)
S96	TI (animal model*)
S95	MH (human)
S94	S84 OR S85 OR S86 OR S87 OR S88 OR S89 OR S90 OR S91 OR S92 OR S93
S93	TX systematic review or meta-analysis
S92	MH systematic review
S91	meta-analysis or systematic review
S90	exp Review Literature as Topic/

S89	TX metasynthe*
S88	TX "research evidence"
S87	TX metaanaly*
S86	TX meta-analy*
S85	"review* of reviews"
S84	TX (systematic or state-of-the-art or scoping or literature or umbrella)
S83	S11 AND S24 AND S82
S82	S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79 OR S80 OR S81
S81	MH Mortality
S80	TI Mortality AND AB Mortality
S79	(MH "Adverse Drug Event+")
S78	TI side effect* AND AB side effect*
S77	TI adverse effect* AND AB adverse effect*
S76	TI adverse event* AND AB adverse event*
S75	TI harm* AND AB harm*
S74	TI safety AND AB safety
S73	(MH "Caregiver Burden")
S72	TI Care* Burden AND AB Care* Burden
S71	MH Quality of Life
S70	TI Quality of Life AND AB Quality of Life
S69	MH Patient Satisfaction
S68	TI Patient Satisfaction AND AB Patient Satisfaction
S67	TI "resident satisfaction" AND AB "resident satisfaction"
S66	TI health resource use AND AB health resource use
S65	TI health resource utilization AND AB health resource utilization
S64	MH health resource utilization
S63	TI "serious adverse event" AND AB "serious adverse event"
S62	TI death AND AB death
S61	TI dying AND AB dying
S60	TI undesirable effects AND AB undesirable effects
S59	TI harmful effects AND AB harmful effects
S58	(MH "Behavioral Symptoms+")
S57	TI (behavio?ral and psychological symptoms of dementia') AND AB ('behavio?ral and psychological symptoms of dementia')
S56	TI neuropsychiatric symptoms AND AB neuropsychiatric symptoms
S55	TI challenging behaviour AND AB challenging behaviour
S54	AB "non-cognitive symptoms" AND TI "non-cognitive symptoms"
S53	TI bpsd AND AB bpsd
S52	TI "aber?ant motor behavio?r" AND AB "aber?ant motor behavio?r"
S51	TI "aberrant motor behaviour" AND AB "aberrant motor behaviour"
S50	TI agitat* AND AB agitat*
S49	TI aggress* AND AB aggress*
S48	TI delusion* AND AB delusion*
S47	TI depress* AND AB depress*
S46	TI disruptive AND AB disruptive
S45	TI euphoria AND AB euphoria
S44	TI hallucination* AND AB hallucination*
S43	TI irritabil* AND AB irritabil*
S42	AB labil* AND TI labil*
S41	TI mood AND AB mood
S40	TI defiant AND AB defiant
S39	TI psychosis AND AB psychosis
S38	TI restlessness AND AB restlessness
S37	TI sociopathy AND AB sociopathy
S36	TI sleep AND AB sleep
S35	TI verbal hostility AND AB verbal hostility
S34	TI violence AND AB violence
S33	TI wandering AND AB wandering
S32	TI hoarding AND AB hoarding
S31	TI screaming AND AB screaming
S30	TI vocali?ation AND AB vocali?ation
S29	TI disinhibition AND AB disinhibition
S28	TI sundown* AND AB sundown*
S27	TI responsive behavio?r* AND AB responsive behavio?r*
S26	TI anxiety AND AB anxiety
S25	TI apathy AND AB apathy
S24	S22 AND S23
S23	S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21

S22	(MH "Antipsychotic Agents+")
S21	TI PRN AND AB PRN
S20	TI "pro re nata" AND AB "pro re nata"
S19	TI regular* AND AB regular*
S18	TI ongoing AND AB ongoing
S17	TI "intermittent" AND AB "intermittent"
S16	TI "continuous" AND AB "continuous"
S15	TI when needed AND AB when needed
S14	TX when necessary
S13	TI "as needed" AND AB "as needed"
S12	TI "as necessary" AND AB "as necessary"
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10
S10	("Dementia")
S9	(MH "Dementia+")
S8	(MH "Dementia, Vascular+")
S7	(MH "Delirium, Dementia, Amnestic, Cognitive Disorders+")
S6	(MH "Dementia, Multi-Infarct")
S5	(MH "Dementia, Presenile+")
S4	(MH "Dementia, Senile+")
S3	("Alzheimer Disease")
S2	(MH "Alzheimer's Disease")
S1	"Lewy Body Disease"

PRN of Antipsychotics - CENTRAL

#1	MeSH descriptor: [Dementia] explode all trees
#2	MeSH descriptor: [Wernicke Encephalopathy] this term only
#3	MeSH descriptor: [Neurocognitive Disorders] explode all trees
#4	dement*
#5	alzheimer*
#6	(lewy* adj2 bod*)
#7	(chronic adj2 cerebrovascular)
#8	("organic brain disease" or "organic brain syndrome")
#9	("normal pressure hydrocephalus" and "shunt*")
#10	"benign senescent forgetfulness"
#11	(cerebr* adj2 deteriorat*)
#12	(cerebral* adj2 insufficient*)
#13	(pick* adj2 disease)
#14	(creutzfeldt or jcd or cjd)
#15	huntington*
#16	binswanger*
#17	korsako*
#18	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17
#42	MeSH descriptor: [Behavioral Symptoms] explode all trees
#43	BPSD
#44	behavio?ral and psychological symptom*
#45	non-cognitive symptom*
#46	aber?ant motor behavio?r
#47	agitat*
#48	aggress*
#49	delusion*
#50	depress*
#51	disruptive
#52	euphoria
#53	hallucination*
#54	irritabil*
#55	labil*
#56	mood
#57	defiant
#58	psychosis
#59	restlessness
#60	sociopathy
#61	sleep
#62	verbal hostility
#63	violence
#64	wandering
#65	hoarding
#66	screaming
#67	vocali?ation
#68	disinhibition

#69 sundown*
#70 responsive behavio?r*
#71 anxiety
#72 apathy
#73 neuropsychiatric symptom*
#74 changed behavio?r
#75 MeSH descriptor: [Mortality] explode all trees
#76 MeSH descriptor: [Caregivers] explode all trees9
#77 MeSH descriptor: [Quality of Life] explode all trees
#78 MeSH descriptor: [Patient Satisfaction] explode all trees
#79 death
#80 Mortality
#81 side effect*
#82 MeSH descriptor: [Drug-Related Side Effects and Adverse Reactions] explode all trees
#83 adverse effect*
#84 adverse event*
#85 harm*
#86 safety
#87 Caregiv* burden
#88 carer* burden
#89 Quality of Life
#90 dying
#91 undesirable effects
#92 harmful effects
#93 adverse drug reaction*
#94 serious adverse event*
#95 MeSH descriptor: [Prevalence] this term only
#96 prevalence:ti,ab
#97 #42 Or #43 OR #44 OR #45 OR #46 OR #47 Or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68 or #69 or #70 or #71 or #72 or #73 or #74 or #75 or #76 or #77 or #78 or #79 or #80 or #81 or #82 or #83 or #84 or #85 or #86 or #87 or #88 or #89 or #90 or #91 or #92 or #93 or #94 or #95 or #96
#120 MeSH descriptor: [Antipsychotic Agents] explode all trees
#121 PRN
#122 "pro re nata"
#123 regular*
#124 ongoing
#125 "intermittent"
#126 "continuous"
#127 "when required"
#128 when needed
#129 when necessary
#130 as required
#131 as needed
#132 as necessary
#133 #121 OR #122 OR #123 OR #124 OR #125 OR #126 OR #127 OR #128 OR #129 OR #130 OR #131 OR #132
#134 #120 AND #133
#135 #18 AND #97 AND #134 with Cochrane Library publication date Between Jan 2018 and Jun 2021, in Cochrane Reviews, Cochrane Protocols, Trials, Clinical Answers

Effectiveness of interventions

What is the effectiveness of interventions to improve the use and appropriateness of antipsychotics, benzodiazepines and antidepressants medication among people with dementia or in residential aged care?

Effectiveness of interventions - Medline

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.

14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. exp Home Nursing/
20. exp Homes for the Aged/
21. exp Residential Facilities/
22. exp Long-Term Care/
23. aged care facilit*.tw.
24. nursing facilit*.tw.
25. nursing home*.tw.
26. long term care facilit*.tw.
27. homes for the aged'.tw.
28. residential facilit*.tw.
29. residential home.tw.
30. RACF.tw.
31. residential aged care facilit*.tw.
32. aged care.tw.
33. extended care.tw.
34. residential aged care.tw.
35. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34
36. 18 or 35
37. Benzodiazepines/
38. Antipsychotic Agents/
39. Antidepressive Agents/
40. Psychotropic Drugs/
41. (antipsychotic* or psychotropic*or neuroleptic* or benzodiazepine* or anxiolytic* or antianxiety drug* or minor tranquilizer* or muscle relaxant* or antidepressant* or anti-depressant*).tw.
42. (beer* adj1 criter*).ti,ab.
43. Inappropriate Prescribing/
44. ((over adj1 prescript*) or (overprescrib* or overprescript*)).ti,ab.
45. ((under adj prescript*) or (underprescrib* or underprescript*)).ti,ab.
46. medication appropriateness index.ti,ab.
47. (quality adj (prescribing or prescription? or medication?)).ti,ab.
48. (improv* adj (prescrib* or prescription? or pharmaco*)).ti,ab.
49. Prescrib*.ti,ab.
50. Medication safety.ti,ab.
51. exp Pharmaceutical Services/
52. case conferenc*.ti,ab.
53. Family conferenc*.ti,ab.
54. exp Medication Therapy Management/
55. (medication? management or medication? therapy management or medication? strategy or medication? strategies or (medication? adj2 review*)).ti,ab.
56. (medic* adj3 manag*).ti,ab.
57. (medic* adj3 optimi#ation).ti,ab.
58. (pharm* adj2 care*).ti,ab.
59. Deprescriptions/
60. Deprescribing.ti,ab.
61. Withdraw*.ti,ab.
62. drug regimen review*.ti,ab.
63. Ceas*.ti,ab.
64. cessat*.ti,ab.
65. medication review.ti,ab.
66. pharmacist-led review*.ti,ab.
67. doctor-led review.ti,ab.
68. exp Drug Utilization/
69. (drug adj utili?ation adj2 (review* or evaluat*)).ti,ab.
70. drug related problem?.ti,ab.
71. ((prescribing or prescription?) adj2 pattern?).ti,ab.
72. assessing care of vulnerable elders.ti,ab.
73. acove.ti,ab.
74. stopp.ti,ab.
75. start screening tool.ti,ab.
76. screening tool of older person's prescriptions.ti,ab.
77. screening tool to alert doctors to right treatment.ti,ab.
78. Medication Errors/
79. (pharmaceutical? or pharmacist? or prescrib*).ti,ab.
80. Pharmaceutical Preparations/
81. Prescription Drugs/
82. pharmacotherap*.ti,ab.
83. Drug Therapy/
84. Drug Monitoring/

85. exp Education/
86. Quality Improvement/
87. staff education.ti,ab.
88. Training Support.ti,ab.
89. exp Quality Assurance, Health Care/
90. exp Quality Indicators, Health Care/
91. Monitor*.ti,ab.
92. audit*.ti,ab.
93. feedback.ti,ab.
94. exp Health Personnel/
95. Professional-Patient Relations/
96. Professional-Family Relations/
97. exp Patient-Centered Care/
98. Inservice Training/
99. Teamwork.ti,ab.
100. Multidisciplinary teams*.ti,ab.
101. Telemedicine/
102. exp Interprofessional Relations/
103. interdisciplinary collaboration.ti,ab.
104. Medication advisory committee meeting.ti,ab.
105. therapeutic* committee meeting*.ti,ab.
106. drug committee meeting*.ti,ab.
107. Interdisciplinary care meeting*.ti,ab.
108. Medical Audit/
109. Medication indicator*.ti,ab.
110. (Appropriate* adj2 prescrib*).ti,ab.
111. 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110
112. 37 or 38 or 39 or 40 or 41
113. 111 and 112
114. exp Behavioral Symptoms/
115. BPSD.ti,ab.
116. (behavio?ral and psychological symptom*).ti,ab.
117. non-cognitive symptom*.ti,ab.
118. aber?ant motor behavio?r.ti,ab.
119. agitat*.ti,ab.
120. aggress*.ti,ab.
121. delusion*.ti,ab.
122. depress*.ti,ab.
123. disruptive.ti,ab.
124. euphoria.ti,ab.
125. hallucination*.ti,ab.
126. irritabil*.ti,ab.
127. labil*.ti,ab.
128. mood.ti,ab.
129. defiant.ti,ab.
130. psychosis.ti,ab.
131. restlessness.ti,ab.
132. sociopathy.ti,ab.
133. sleep.ti,ab.
134. verbal hostility.ti,ab.
135. violence.ti,ab.
136. wandering.ti,ab.
137. hoarding.ti,ab.
138. screaming.ti,ab.
139. vocali?ation.ti,ab.
140. disinhibition.ti,ab.
141. sundown*.ti,ab.
142. responsive behavio?r*.ti,ab.
143. anxiety.ti,ab.
144. apathy.ti,ab.
145. neuropsychiatric symptom*.ti,ab.
146. Mortality/
147. Caregivers/
148. Morbidity/
149. "Quality of Life"/
150. Patient Satisfaction/
151. death.ti,ab.
152. Mortality.ti,ab.
153. side effect*.ti,ab.
154. adverse effect*.ab,ti.

155. adverse event*.ti,ab.
156. harm*.ab,ti.
157. safety.ab,ti.
158. Caregiv* burden.ti,ab.
159. carer* burden.ti,ab.
160. Morbidit*.ti,ab.
161. Quality of Life.ti,ab.
162. dying.ti,ab.
163. undesirable effects.ti,ab.
164. harmful effects.ti,ab.
165. adverse drug reaction*.ti,ab.
166. serious adverse event*.ti,ab.
167. "health resource use".ti,ab.
168. "resident satisfaction".ti,ab.
169. Prevalence/
170. prevalence.tw.
171. (changed adj1 behavio?r).tw.
172. 114 or 115 or 116 or 117 or 118 or 119 or 120 or 121 or 122 or 123 or 124 or 125 or 126 or 127 or 128 or 129 or 130 or 131 or 132 or 133 or 134 or 135 or 136 or 137 or 138 or 139 or 140 or 141 or 142 or 143 or 144 or 145 or 146 or 147 or 148 or 149 or 150 or 151 or 152 or 153 or 154 or 155 or 156 or 157 or 158 or 159 or 160 or 161 or 162 or 163 or 164 or 165 or 166 or 167 or 168 or 169 or 170 or 171
173. 36 and 113 and 172
174. (systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
175. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
176. "review* of reviews".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
177. meta-analy*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
178. metaanaly*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
179. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
180. "research evidence".mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
181. metasynthe*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
182. exp Review Literature as Topic/
183. exp Review/
184. Meta-Analysis as Topic/
185. Meta-Analysis/
186. "systematic review"/
187. 174 or 175 or 176 or 177 or 178 or 179 or 180 or 181 or 182 or 183 or 184 or 185 or 186
188. "randomized controlled trial".pt.
189. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
190. (retraction of publication or retracted publication).pt.
191. 188 or 189 or 190
192. (animals not humans).sh.
193. ((comment or editorial or meta-analysis or practice-guideline or review or letter or journal correspondence) not "randomized controlled trial").pt.
194. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not "randomized controlled trial".pt.
195. 191 not (192 or 193 or 194)
196. 187 or 195
197. 173 and 196

Effectiveness of interventions - EMBASE

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.

5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. exp nursing home/
20. exp home for the aged/
21. exp residential care/
22. exp long term care/
23. aged care facilit*.tw.
24. nursing facilit*.tw.
25. nursing home*.tw.
26. long term care facilit*.tw.
27. homes for the aged.tw.
28. residential facilit*.tw.
29. residential home.tw.
30. RACF.tw.
31. residential aged care facilit*.tw.
32. aged care.tw.
33. extended care.tw.
34. residential aged care.tw.
35. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34
36. 18 or 35
37. (beer* adj1 criter*).ti,ab.
38. inappropriate prescribing/
39. ((over adj1 prescript*) or (overprescrib* or overprescript*)).ti,ab.
40. ((under adj prescript*) or (underprescrib* or underprescript*)).ti,ab.
41. potentially inappropriate medication/
42. medication appropriateness index.ti,ab.
43. (quality adj (prescribing or prescription? or medication?)).ti,ab.
44. (improv* adj (prescrib* or prescription? or pharmaco*)).ti,ab.
45. Prescrib*.ti,ab.
46. Medication safety.ti,ab.
47. exp "pharmacy (shop)"/
48. Pharmaceutical Services.ti,ab.
49. case conferenc*.ti,ab.
50. case conferenc*.ti,ab.
51. Family conferenc*.ti,ab.
52. exp medication therapy management/
53. (medication? management or medication? therapy management or medication? strategy or medication? strategies or (medication? adj2 review*)).ti,ab.
54. (medic* adj3 manag*).ti,ab.
55. (medic* adj3 optimi#ation).ti,ab.
56. (pharm* adj2 care*).ti,ab.
57. deprescription/
58. Deprescribing.ti,ab.
59. Withdraw*.ti,ab.
60. drug regimen review*.ti,ab.
61. Ceas*.ti,ab.
62. cessat*.ti,ab.
63. medication review.ti,ab.
64. pharmacist-led review*.ti,ab.
65. doctor-led review.ti,ab.
66. exp drug utilization/
67. (drug adj utili?ation adj2 (review* or evaluat*)).ti,ab.
68. drug related problem?.ti,ab.
69. ((prescribing or prescription?) adj2 pattern?).ti,ab.
70. assessing care of vulnerable elders.ti,ab.
71. acove.ti,ab.
72. stopp.ti,ab.
73. start screening tool.ti,ab.
74. screening tool of older person's prescriptions.ti,ab.
75. screening tool to alert doctors to right treatment.ti,ab.
76. medication error/

77. (pharmaceutical? or pharmacist?).ti,ab.
78. prescription drug/
79. pharmacotherap*.ti,ab.
80. drug therapy/
81. drug monitoring/
82. social work education/ or continuing education/ or nursing education/ or occupational therapy education/ or patient education/ or research based nursing education/ or clinical education/ or paramedical education/ or allied health education/ or interdisciplinary education/
83. education/
84. staff education.ti,ab.
85. Training Support.ti,ab.
86. Quality Improvement.ti,ab.
87. exp health care quality/
88. Quality indicators.ti,ab.
89. Monitor*.ti,ab.
90. audit*.ti,ab.
91. clinical audit/
92. feedback.ti,ab.
93. exp health care personnel/
94. professional-patient relationship/
95. human relation/
96. patient care/
97. in service training/
98. Teamwork.ti,ab.
99. Multidisciplinary teams*.ti,ab.
100. telemedicine/
101. exp public relations/
102. interdisciplinary collaboration.ti,ab.
103. Medication advisory committee meeting.ti,ab.
104. therapeutic* committee meeting*.ti,ab.
105. drug committee meeting*.ti,ab.
106. Interdisciplinary care meeting*.ti,ab.
107. Medication indicator*.ti,ab.
108. (Appropriate* adj2 prescrib*).ti,ab.
109. 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108
110. (antipsychotic* or psychotropic*or neuroleptic* or benzodiazepine* or anxiolytic* or antianxiety drug* or minor tranquilizer* or muscle relaxant* or antidepressant* or anti-depressant*).tw.
111. benzodiazepine derivative/
112. neuroleptic agent/
113. antidepressant agent/
114. psychotropic agent/
115. 110 or 111 or 112 or 113 or 114
116. 109 and 115
117. exp Behavioral Symptoms/
118. BPSD.ti,ab.
119. (behavio?ral and psychological symptom*).ti,ab.
120. non-cognitive symptom*.ti,ab.
121. ab?er?ant motor behaviour.ti,ab.
122. agitat*.ti,ab.
123. aggress*.ti,ab.
124. delusion*.ti,ab.
125. disruptive.ti,ab.
126. euphoria.ti,ab.
127. hallucination*.ti,ab.
128. irritabil*.ti,ab.
129. labil*.ti,ab.
130. mood.ti,ab.
131. defiant.ti,ab.
132. psychosis.ti,ab.
133. restlessness.ti,ab.
134. sociopathy.ti,ab.
135. sleep.ti,ab.
136. verbal hostility.ti,ab.
137. violence.ti,ab.
138. wandering.ti,ab.
139. hoarding.ti,ab.
140. screaming.ti,ab.
141. vocali?ation.ti,ab.
142. disinhibition.ti,ab.
143. sundown*.ti,ab.

144. responsive behavio?r*.ti,ab.
145. anxiety.ti,ab.
146. apathy.ti,ab.
147. (changed adj1 behavio?r).tw.
148. 117 or 118 or 119 or 120 or 121 or 122 or 123 or 124 or 125 or 126 or 127 or 128 or 129 or 130 or 131 or 132 or 133 or 134 or 135 or 136 or 137 or 138 or 139 or 140 or 141 or 142 or 143 or 144 or 145 or 146 or 147
149. Mortality/
150. Caregivers/
151. "Quality of Life"/
152. Patient Satisfaction/
153. resident satisfaction.ti,ab.
154. "health resource use".ti,ab.
155. Mortality.ti,ab.
156. side effect*.ti,ab.
157. adverse effect*.ab,ti.
158. adverse event*.ti,ab.
159. harm*.ab,ti.
160. safety.ab,ti.
161. Caregiv* burden.ti,ab.
162. carer* burden.ti,ab.
163. Morbidit*.ti,ab.
164. Quality of Life.ti,ab.
165. dying.ti,ab.
166. undesirable effects.ti,ab.
167. harmful effects.ti,ab.
168. adverse drug reaction*.ti,ab.
169. serious adverse event*.ti,ab.
170. adverse drug reaction/ or adverse event/
171. prevalence/
172. prevalence.tw.
173. 149 or 150 or 151 or 152 or 153 or 154 or 155 or 156 or 157 or 158 or 159 or 160 or 161 or 162 or 163 or 164 or 165 or 166 or 167 or 168 or 169 or 170 or 171 or 172
174. 148 or 173
175. 36 and 116 and 174
176. ((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
177. "review* of reviews".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
178. meta-analy*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
179. metaanaly*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
180. ((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
181. "research evidence".mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
182. metasynthe*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
183. meta-synthe*.tw.
184. systematic review/
185. "systematic review (topic)"/
186. meta analysis/
187. "meta analysis (topic)"/
188. 176 or 177 or 178 or 179 or 180 or 181 or 182 or 183 or 184 or 185 or 186 or 187
189. (random$ or placebo$ or single blind$ or double blind$ or triple blind$).ti,ab.
190. RETRACTED ARTICLE/
191. 189 or 190
192. (animal$ not human$).sh,hw.
193. (book or conference paper or editorial or letter or review).pt. not exp randomized controlled trial/
194. (random sampl$ or random digit$ or random effect$ or random survey or random regression).ti,ab. not exp randomized controlled trial/
195. 191 not (192 or 193 or 194)
196. 188 or 195
197. 175 and 196
198. limit 197 to english language

Effectiveness of interventions - PSYCHINFO

1. exp Dementia/

2. dement*.mp.
3. alzheimer*.mp.
4. (lewy* adj2 bod*).mp.
5. (chronic adj2 cerebrovascular).mp.
6. ("organic brain disease" or "organic brain syndrome").mp.
7. ("normal pressure hydrocephalus" and "shunt*").mp.
8. "benign senescent forgetfulness".mp.
9. (cerebr* adj2 deteriorat*).mp.
10. (cerebral* adj2 insufficient*).mp.
11. (pick* adj2 disease).mp.
12. (creutzfeldt or jcd or cjd).mp.
13. huntington*.mp.
14. binswanger*.mp.
15. korsako*.mp.
16. exp Wernicke's Syndrome/
17. exp Huntingtons Disease/
18. exp Cognitive Impairment/
19. exp Kluver Bucy Syndrome/
20. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. (beer* adj1 criter*).ti,ab.
22. "Prescribing (Drugs)"/
23. Inappropriate Prescribing.ti,ab.
24. ((over adj1 prescript*) or (overprescrib* or overprescript*)).ti,ab.
25. ((under adj prescript*) or (underprescrib* or underprescript*)).ti,ab.
26. medication appropriateness index.ti,ab.
27. (quality adj (prescribing or prescription? or medication?)).ti,ab.
28. (improv* adj (prescrib* or prescription? or pharmaco*)).ti,ab.
29. Prescrib*.ti,ab.
30. Medication safety.ti,ab.
31. Pharmaceutical Services.ti,ab.
32. case conferenc*.ti,ab.
33. Family conferenc*.ti,ab.
34. Medication Therapy Management.ti,ab.
35. (medication? management or medication? therapy management or medication? strategy or medication? strategies or (medication? adj2 review*)).ti,ab.
36. (medic* adj3 manag*).ti,ab.
37. (medic* adj3 optimi#ation).ti,ab.
38. (pharm* adj2 care*).ti,ab.
39. Deprescriptions.ti,ab.
40. Deprescrib*.ti,ab.
41. Withdraw*.ti,ab.
42. drug regimen review*.ti,ab.
43. Ceas*.ti,ab.
44. cessat*.ti,ab.
45. medication review.ti,ab.
46. pharmacist-led review*.ti,ab.
47. doctor-led review.ti,ab.
48. exp Drug Therapy/
49. (drug adj utili?ation adj2 (review* or evaluat*)).ti,ab.
50. drug related problem?.ti,ab.
51. ((prescribing or prescription?) adj2 pattern?).ti,ab.
52. assessing care of vulnerable elders.ti,ab.
53. acove.ti,ab.
54. stopp.ti,ab.
55. start screening tool.ti,ab.
56. screening tool of older person's prescriptions.ti,ab.
57. screening tool to alert doctors to right treatment.ti,ab.
58. Medication Error*.ti,ab.
59. (pharmaceutical? or pharmacist? or prescrib*).ti,ab.
60. Prescription Drugs/
61. pharmacotherap*.ti,ab.
62. Drug Therapy/
63. monitoring/
64. education/
65. "Quality of Care"/
66. staff education.ti,ab.
67. Training Support.ti,ab.
68. Decision Making/
69. Quality Indicator*.ti,ab.
70. Monitor*.ti,ab.
71. feedback.ti,ab.
72. exp Health Personnel/
73. Professional-Patient Relation*.ti,ab.

74. Professional-Family Relation*.ti,ab.
75. Inservice Training/
76. Teamwork.ti,ab.
77. Interdisciplinary Treatment Approach/
78. Teamwork/
79. Multidisciplinary team*.ti,ab.
80. Telemedicine/
81. Interprofessional Relation*.ti,ab.
82. interdisciplinary collaboration.ti,ab.
83. Medication advisory committee meeting.ti,ab.
84. therapeutic* committee meeting*.ti,ab.
85. drug committee meeting*.ti,ab.
86. Interdisciplinary care meeting*.ti,ab.
87. Clinical Audits/
88. Medication indicator*.ti,ab.
89. (Appropriate* adj2 prescrib*).ti,ab.
90. Health Care Services/
91. 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90
92. Behavior Problems/
93. Aggressive Behavior/
94. Psychiatric Symptoms/
95. Mental Disorders/
96. Sleep Wake Disorders/
97. Wandering Behavior/
98. Antisocial Behavior/
99. BPSD.ti,ab.
100. (behavio?ral and psychological symptom*).ti,ab.
101. non-cognitive symptom*.ti,ab.
102. aber?ant motor behavio?r.ti,ab.
103. agitat*.ti,ab.
104. delusion*.ti,ab.
105. aggress*.ti,ab.
106. depress*.ti,ab.
107. disruptive.ti,ab.
108. euphoria.ti,ab.
109. hallucination*.ti,ab.
110. irritabil*.ti,ab.
111. labil*.ti,ab.
112. mood.ti,ab.
113. defiant.ti,ab.
114. psychosis.ti,ab.
115. restlessness.ti,ab.
116. sociopathy.ti,ab.
117. sleep.ti,ab.
118. verbal hostility.ti,ab.
119. violence.ti,ab.
120. wandering.ti,ab.
121. hoarding.ti,ab.
122. screaming.ti,ab.
123. vocali?ation.ti,ab.
124. disinhibition.ti,ab.
125. sundown*.ti,ab.
126. responsive behavio?r*.ti,ab.
127. anxiety.ti,ab.
128. apathy.ti,ab.
129. neuropsychiatric symptoms.ti,ab.
130. changed behavio?r*.ti,ab.
131. Mortality/
132. Caregivers/
133. "Quality of Life"/
134. Patient Satisfaction/
135. Mortality.ti,ab.
136. side effect*.ti,ab.
137. adverse effect*.ti,ab.
138. adverse event*.ti,ab.
139. harm*.ti,ab.
140. safety.ti,ab.
141. Caregiv* burden.ti,ab.
142. carer* burden.ti,ab.
143. Quality of Life.ti,ab.

144.	dying.ti,ab.
145.	undesirable effects.ti,ab.
146.	harmful effects.ti,ab.
147.	adverse drug reaction*.ti,ab.
148.	serious adverse event*.ti,ab.
149.	"Side Effects (Treatment)"/
150.	"Side Effects (Drug)"/
151.	"health resource use".ti,ab.
152.	resident satisfaction.ti,ab.
153.	92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113 or 114 or 115 or 116 or 117 or 118 or 119 or 120 or 121 or 122 or 123 or 124 or 125 or 126 or 127 or 128 or 129 or 130 or 131 or 132 or 133 or 134 or 135 or 136 or 137 or 138 or 139 or 140 or 141 or 142 or 143 or 144 or 145 or 146 or 147 or 148 or 149 or 150 or 151 or 152
154.	(systematic or state-of-the-art or scoping or literature or umbrella).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
155.	((systematic or state-of-the-art or scoping or literature or umbrella) adj (review* or overview* or assessment*)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
156.	"review* of reviews".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
157.	meta-analy*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
158.	metaanaly*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
159.	((systematic or evidence) adj1 assess*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
160.	"research evidence".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
161.	metasynthe*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
162.	exp Review/
163.	Meta-Analysis/
164.	"systematic review"/
165.	154 or 155 or 156 or 157 or 158 or 159 or 160 or 161 or 162 or 163 or 164
166.	double-blind.tw.
167.	randomised.mp.
168.	randomized.tw.
169.	randomly assigned.tw.
170.	166 or 167 or 168 or 169
171.	165 or 170
172.	exp antidepressant drugs/
173.	exp Monoamine Oxidase Inhibitors/
174.	exp Tricyclic Antidepressant Drugs/
175.	exp Serotonin Reuptake Inhibitors/
176.	exp Serotonin Norepinephrine Reuptake Inhibitors/
177.	172 or 173 or 174 or 175 or 176
178.	91 and 177
179.	20 and 153 and 178
180.	171 and 179
181.	limit 180 to english language

Effectiveness of Interventions - CINHAL

#	**Query**
S209	S173 AND S208
S208	S184 OR S207
S207	S204 NOT S206
S206	S205 NOT S185
S205	S186 OR S187 OR S188
S204	S190 OR S191 OR S192 OR S193 OR S194 OR S195 OR S196 OR S197 OR S198 OR S199 OR S200 OR S201 OR S202 OR S203
S203	MH randomized controlled trials
S202	MH double-blind studies
S201	MH single-blind studies
S200	MH random assignment
S199	MH pretest-posttest design
S198	MH cluster sample
S197	TI (randomised OR randomized)
S196	AB (random*)
S195	TI (trial)
S194	MH (sample size) AND AB (assigned OR allocated OR control)

S193	MH (placebos)
S192	PT (randomized controlled trial)
S191	AB (control W5 group)
S190	MH (crossover design) OR MH (comparative studies)
S189	AB (cluster W3 RCT)
S188	MH animals+
S187	MH (animal studies)
S186	TI (animal model*)
S185	MH (human)
S184	S174 OR S175 OR S176 OR S177 OR S178 OR S179 OR S180 OR S181 OR S182 OR S183
S183	TX systematic review or meta-analysis
S182	MH systematic review
S181	meta-analysis or systematic review
S180	exp Review Literature as Topic/
S179	TX metasynthe*
S178	TX "research evidence"
S177	TX metaanaly*
S176	TX meta-analy*
S175	"review* of reviews"
S174	TX (systematic or state-of-the-art or scoping or literature or umbrella)
S173	S26 AND S112 AND S172
S172	S113 OR S114 OR S115 OR S116 OR S117 OR S118 OR S119 OR S120 OR S121 OR S122 OR S123 OR S124 OR S125 OR S126 OR S127 OR S128 OR S129 OR S130 OR S131 OR S132 OR S133 OR S134 OR S135 OR S136 OR S137 OR S138 OR S139 OR S140 OR S141 OR S142 OR S143 OR S144 OR S145 OR S146 OR S147 OR S148 OR S149 OR S150 OR S151 OR S152 OR S153 OR S154 OR S155 OR S156 OR S157 OR S158 OR S159 OR S160 OR S161 OR S162 OR S163 OR S164 OR S165 OR S166 OR S167 OR S168 OR S169 OR S170 OR S171
S171	(MH "Prevalence")
S170	TI prevalence AND AB prevalence
S169	MH Mortality
S168	TI Mortality AND AB Mortality
S167	(MH "Adverse Drug Event+")
S166	TI side effect* AND AB side effect*
S165	TI adverse effect* AND AB adverse effect*
S164	TI adverse event* AND AB adverse event*
S163	TI harm* AND AB harm*
S162	TI safety AND AB safety
S161	(MH "Caregiver Burden")
S160	TI Care* Burden AND AB Care* Burden
S159	MH Quality of Life
S158	TI Quality of Life AND AB Quality of Life
S157	MH Patient Satisfaction
S156	TI Patient Satisfaction AND AB Patient Satisfaction
S155	TI "resident satisfaction" AND AB "resident satisfaction"
S154	TI health resource use AND AB health resource use
S153	TI health resource utilization AND AB health resource utilization
S152	MH health resource utilization
S151	TI "serious adverse event" AND AB "serious adverse event"
S150	TI death AND AB death
S149	TI dying AND AB dying
S148	TI undesirable effects AND AB undesirable effects
S147	TI harmful effects AND AB harmful effects
S146	(MH "Behavioral Symptoms+")
S145	TI (behavio?ral and psychological symptoms of dementia') AND AB ('behavio?ral and psychological symptoms of dementia')
S144	TI neuropsychiatric symptoms AND AB neuropsychiatric symptoms
S143	TI challenging behaviour AND AB challenging behaviour
S142	AB "non-cognitive symptoms" AND TI "non-cognitive symptoms"
S141	TI bpsd AND AB bpsd
S140	TI "aber?ant motor behavio?r" AND AB "aber?ant motor behavio?r"
S139	TI "aberrant motor behaviour" AND AB "aberrant motor behaviour"
S138	TI agitat* AND AB agitat*
S137	TI aggress* AND AB aggress*
S136	TI delusion* AND AB delusion*
S135	TI depress* AND AB depress*
S134	TI disruptive AND AB disruptive
S133	TI euphoria AND AB euphoria
S132	TI hallucination* AND AB hallucination*
S131	TI irritabil* AND AB irritabil*
S130	AB labil* AND TI labil*
S129	TI mood AND AB mood
S128	TI defiant AND AB defiant
S127	TI psychosis AND AB psychosis

S126	TI restlessness AND AB restlessness
S125	TI sociopathy AND AB sociopathy
S124	TI sleep AND AB sleep
S123	TI verbal hostility AND AB verbal hostility
S122	TI violence AND AB violence
S121	TI wandering AND AB wandering
S120	TI hoarding AND AB hoarding
S119	TI screaming AND AB screaming
S118	TI vocali?ation AND AB vocali?ation
S117	TI disinhibition AND AB disinhibition
S116	TI sundown* AND AB sundown*
S115	TI responsive behavio?r* AND AB responsive behavio?r*
S114	TI anxiety AND AB anxiety
S113	TI apathy AND AB apathy
S112	S106 AND S111
S111	S107 OR S108 OR S109 OR S110
S110	TI ((antipsychotic* or psychotropic*or neuroleptic* or benzodiazepine* or anxiolytic* or antianxiety drug* or minor tranquilizer* or muscle relaxant* or antidepressant* or anti-depressant*)) AND AB ((antipsychotic* or psychotropic*or neuroleptic* or benzodiazepine* or anxiolytic* or antianxiety drug* or minor tranquilizer* or muscle relaxant* or antidepressant* or anti-depressant*))
S109	(MH "Antidepressive Agents") OR (MH "Antidepressive Agents, Second Generation")
S108	(MH "Antipsychotic Agents")
S107	(MH "Antianxiety Agents, Benzodiazepine")
S106	S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79 OR S80 OR S81 OR S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88 OR S89 OR S90 OR S91 OR S92 OR S93 OR S94 OR S95 OR S96 OR S97 OR S98 OR S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105
S105	(MH "Quality of Health Care+") OR (MH "Quality of Care Research")
S104	TI "Quality Indicator*" AND AB "Quality Indicator*"
S103	TI monitoring AND AB monitoring
S102	TI (monitoring and evaluation) AND AB (monitoring and evaluation)
S101	TI audit* AND AB audit*
S100	TI feedback AND AB feedback
S99	TI Quality Assurance AND AB Quality Assurance
S98	TI Training Support AND AB Training Support
S97	(MH "Quality Improvement+")
S96	(MH "Education+")
S95	(MH "Staff Development")
S94	TI staff education AND AB staff education
S93	TI Quality Assurance AND AB Quality Assurance
S92	TI (beer* N1 criter*) AND AB (beer* N1 criter*)
S91	(MH "Inappropriate Prescribing")
S90	TI (((over N1 prescript*) or (overprescrib* or overprescript*))) AND AB (((over N1 prescript*) or (overprescrib* or overprescript*)))
S89	TI (((under N prescript*) or (underprescrib* or underprescript*))) AND AB (((under N prescript*) or (underprescrib* or underprescript*)))
S88	TI medication appropriateness index AND AB medication appropriateness index
S87	(MH "Prescribing Patterns")
S86	TI Prescrib* AND AB Prescrib*
S85	TI Medication safety AND AB Medication safety
S84	TI Pharmaceutical Services AND AB Pharmaceutical Services
S83	TI case conferenc* AND AB case conferenc*
S82	TI Family conferenc* AND AB Family conferenc*
S81	(MH "Medication Management")
S80	TI ((medication? management or medication? therapy management or medication? strategy or medication? strategies or (medication? N2 review*))) AND AB ((medication? management or medication? therapy management or medication? strategy or medication? strategies or (medication? N2 review*)))
S79	TI (medic* N3 manag*) AND AB (medic* N3 manag*)
S78	TI (medic* N3 optimi#ation) AND AB (medic* N3 optimi#ation)
S77	TI (pharm* N2 care*) AND AB (pharm* N2 care*)
S76	TI Deprescrib* AND AB Deprescrib*
S75	TI deprescription AND AB deprescription
S74	TI Withdraw* AND AB Withdraw*
S73	TI drug regimen review* AND AB drug regimen review*
S72	(MH "Pharmacy Service")
S71	(MH "Drugs, Prescription")
S70	TI Ceas* AND AB Ceas*
S69	TI cessat* AND AB cessat*
S68	TI medication review AND AB medication review

S67	TI pharmacist-led review* AND AB pharmacist-led review*
S66	TI doctor-led review AND AB doctor-led review
S65	(MH "Drug Utilization+")
S64	TI ((drug N utili?ation N2 (review* or evaluat*))) AND AB ((drug N utili?ation N2 (review* or evaluat*)))
S63	TI drug related problem AND AB drug related problem
S62	TI (((prescribing or prescription?) N2 pattern?)) AND AB (((prescribing or prescription?) N2 pattern?))
S61	TI assessing care of vulnerable elders AND AB assessing care of vulnerable elders
S60	TI acove AND AB acove
S59	TI stopp AND AB stopp
S58	TI start screening tool AND AB start screening tool
S57	TI screening tool of older person's prescriptions AND AB screening tool of older person's prescriptions
S56	TI screening tool to alert doctors to right treatment AND AB screening tool to alert doctors to right treatment
S55	(MH "Medication Errors")
S54	TI ((pharmaceutical? or pharmacist? or prescrib*)) AND AB ((pharmaceutical? or pharmacist? or prescrib*))
S53	TI Pharmaceutical Preparations AND AB Pharmaceutical Preparations
S52	TI pharmacotherap* AND AB pharmacotherap*
S51	(MH "Drug Therapy")
S50	(MH "Drug Monitoring")
S49	(MH "Prescription Drug Monitoring Programs")
S48	(MH "Evaluation and Quality Improvement Program")
S47	(MH "Quality Improvement")
S46	(MH "Health Personnel")
S45	(MH "Allied Health Personnel")
S44	(MH "Professional-Patient Relations") OR (MH "Professional-Family Relations")
S43	(MH "Patient Centered Care")
S42	(MH "Multidisciplinary Care Team")
S41	(MH "Multiskilled Health Practitioners")
S40	TI Inservice Training AND AB Inservice Training
S39	TI Teamwork AND AB Teamwork
S38	TI Multidisciplinary team* AND AB Multidisciplinary team*
S37	(MH "Telemedicine")
S36	(MH "Interprofessional Relations+")
S35	TI interdisciplinary collaboration AND AB interdisciplinary collaboration
S34	TI Medication advisory committee meeting AND AB Medication advisory committee meeting
S33	TI therapeutic* committee meeting* AND AB therapeutic* committee meeting*
S32	TI drug committee meeting* AND AB drug committee meeting*
S31	TI Interdisciplinary care meeting* AND AB Interdisciplinary care meeting*
S30	(MH "Audit")
S29	(MH "Clinical Indicators")
S28	TI Medication indicator* AND AB Medication indicator*
S27	TI (Appropriate* N2 prescrib*) AND AB (Appropriate* N2 prescrib*)
S26	S11 OR S25
S25	S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24
S24	(MH "Nursing Homes+")
S23	(MH "Residential Facilities+")
S22	TI aged care facilit* AND AB aged care facilit*
S21	TI nursing facilit* AND AB nursing facilit*
S20	TI nursing home* AND AB nursing home*
S19	TI long term care facilit* AND AB long term care facilit*
S18	TI homes for the aged AND AB homes for the aged
S17	TI residential facilit* AND AB residential facilit*
S16	TI residential home AND AB residential home
S15	TI RACF AND AB RACF
S14	TI residential aged care facilit* AND AB residential aged care facilit*
S13	TI aged care AND AB aged care
S12	TI extended care AND AB extended care
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10
S10	("Dementia")
S9	(MH "Dementia+")
S8	(MH "Dementia, Vascular+")
S7	(MH "Delirium, Dementia, Amnestic, Cognitive Disorders+")
S6	(MH "Dementia, Multi-Infarct")
S5	(MH "Dementia, Presenile+")
S4	(MH "Dementia, Senile+")
S3	("Alzheimer Disease")
S2	(MH "Alzheimer's Disease")
S1	"Lewy Body Disease"

Effectiveness of interventions

#1	MeSH descriptor: [Dementia] explode all trees
#2	MeSH descriptor: [Wernicke Encephalopathy] this term only
#3	MeSH descriptor: [Neurocognitive Disorders] explode all trees
#4	dement*
#5	alzheimer*
#6	(lewy* adj2 bod*)
#7	(chronic adj2 cerebrovascular)
#8	("organic brain disease" or "organic brain syndrome")
#9	("normal pressure hydrocephalus" and "shunt*")
#10	"benign senescent forgetfulness"
#11	(cerebr* adj2 deteriorat*)
#12	(cerebral* adj2 insufficient*)
#13	(pick* adj2 disease)
#14	(creutzfeldt or jcd or cjd)
#15	huntington*
#16	binswanger*
#17	korsako*
#18	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17
#42	MeSH descriptor: [Behavioral Symptoms] explode all trees
#43	BPSD
#44	behavio?ral and psychological symptom*
#45	non-cognitive symptom*
#46	aber?ant motor behavio?r
#47	agitat*
#48	aggress*
#49	delusion*
#50	depress*
#51	disruptive
#52	euphoria
#53	hallucination*
#54	irritabil*
#55	labil*
#56	mood
#57	defiant
#58	psychosis
#59	restlessness
#60	sociopathy
#61	sleep
#62	verbal hostility
#63	violence
#64	wandering
#65	hoarding
#66	screaming
#67	vocali?ation
#68	disinhibition
#69	sundown*
#70	responsive behavio?r*
#71	anxiety
#72	apathy
#73	neuropsychiatric symptom*
#74	changed behavio?r
#75	MeSH descriptor: [Mortality] explode all trees
#76	MeSH descriptor: [Caregivers] explode all trees9
#77	MeSH descriptor: [Quality of Life] explode all trees
#78	MeSH descriptor: [Patient Satisfaction] explode all trees
#79	death
#80	Mortality
#81	side effect*
#82	MeSH descriptor: [Drug-Related Side Effects and Adverse Reactions] explode all trees
#83	adverse effect*
#84	adverse event*
#85	harm*
#86	safety
#87	Caregiv* burden
#88	carer* burden
#89	Quality of Life
#90	dying
#91	undesirable effects
#92	harmful effects
#93	adverse drug reaction*

#94 serious adverse event*
#95 MeSH descriptor: [Prevalence] this term only
#96 prevalence:ti,ab
#97 #42 Or #43 OR #44 OR #45 OR #46 OR #47 Or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68 or #69 or #70 or #71 or #72 or #73 or #74 or #75 or #76 or #77 or #78 or #79 or #80 or #81 or #82 or #83 or #84 or #85 or #86 or #87 or #88 or #89 or #90 or #91 or #92 or #93 or #94 or #95 or #96
#214 MeSH descriptor: [Polypharmacy] 1 tree(s) exploded
#215 (polypharm*):ti,ab,kw
#216 (multi-drug* or multidrug*) near/2 (therapy or therapies or prescribing or treatment or regime*):ti,ab,kw
#217 (beer near/2 criter*):ti,ab,kw
#218 MeSH descriptor: [Inappropriate Prescribing] explode all trees
#219 (appropriate or optim* or inappropriat* or suboptim* or sub-optim* or unnecessary or incorrect* or in-correct* or excessive or multiple or concurrent*) near/2 (medicine* or medication* or prescription* or drug*):ti,ab,kw
#220 (over near/1 prescript*) or (overprescrib* or overprescript*):ti,ab,kw
#221 (under near/1 prescript*) or (underprescrib* or underprescript*):ti,ab,kw
#222 medication appropriateness index:ti,ab,kw
#223 (quality near/1 (prescribing or prescription* or medication*)):ti,ab,kw
#224 (improv* near/1 (prescrib* or prescription* or pharmaco*)):ti,ab,kw
#225 case conferencing:ti,ab,kw
#226 MeSH descriptor: [Medication Therapy Management] explode all trees
#227 medication* management:ti,ab,kw or "medication* therapy management":ti,ab,kw or "medication* strategy":ti,ab,kw or "medication* strategies":ti,ab,kw or (medication* near/2 review*):ti,ab,kw
#228 drug regimen review*:ti,ab,kw or (drug near/1 utili?ation near/2 (review* or evaluat*)):ti,ab,kw
#229 MeSH descriptor: [Drug Utilization Review] explode all trees
#230 drug related problem*:ti,ab,kw or (prescription* near/2 pattern*):ti,ab,kw or "assessing care of vulnerable elders":ti,ab,kw or (acove):ti,ab,kw or (stopp):ti,ab,kw
#231 start screening tool:ti,ab,kw or "screening tool of older person's prescriptions":ti,ab,kw or "screening tool to alert doctors to right treatment":ti,ab,kw
#232 MeSH descriptor: [Medication Errors] this term only
#233 (pharmaceutical* or pharmacist* or prescrib*):ti,ab,kw
#234 MeSH descriptor: [Pharmaceutical Preparations] this term only
#235 MeSH descriptor: [Pharmacists] this term only
#236 MeSH descriptor: [Pharmacy Technicians] this term only
#237 MeSH descriptor: [Prescription Drugs] this term only
#238 MeSH descriptor: [Drug Prescriptions] this term only
#239 MeSH descriptor: [Prescriptions] this term only
#240 MeSH descriptor: [Pharmaceutical Services] this term only
#241 MeSH descriptor: [Drug-Related Side Effects and Adverse Reactions] this term only
#242 (pharmacotherap*):ti,ab,kw
#243 MeSH descriptor: [Drug Therapy] this term only
#244 MeSH descriptor: [Drug Monitoring] this term only
#245 (Deprescrib*):ti,ab
#246 (cease* or ceasing* or cessation*):ti,ab
#247 withdraw*:ab,ti
#248 discontinu*:ti,ab
#249 stopp*:ti,ab
#250 medication review:ti,ab
#251 pharmacist-led review*:ti,ab
#252 doctor-led review:ti,ab
#253 MeSH descriptor: [Education] this term only
#254 MeSH descriptor: [Quality Improvement] 1 tree(s) exploded
#255 staff education:ti,ab
#256 Training Support:ti,ab
#257 MeSH descriptor: [Quality Assurance, Health Care] explode all trees
#258 MeSH descriptor: [Quality Indicators, Health Care] explode all trees
#259 Monitor*:ti,ab
#260 audit*:ti,ab
#261 feedback:ti,ab
#262 MeSH descriptor: [Health Personnel] explode all trees
#263 MeSH descriptor: [Professional-Patient Relations] this term only
#264 MeSH descriptor: [Professional-Family Relations] this term only
#265 MeSH descriptor: [Patient-Centered Care] explode all trees
#266 MeSH descriptor: [Inservice Training] this term only
#267 Teamwork:ti,ab
#268 Multidisciplinary team*:ti,ab
#269 MeSH descriptor: [Telemedicine] this term only
#270 MeSH descriptor: [Interprofessional Relations] explode all trees
#271 interdisciplinary collaboration:ti,ab
#272 Medication advisory committee meeting:ti,ab
#273 therapeutic* committee meeting*:ti,ab
#274 drug committee meeting*:ti,ab
#275 Interdisciplinary care meeting*:ti,ab

#276 MeSH descriptor: [Medical Audit] explode all trees
#277 Medication indicator*:ti,ab
#278 (Appropriate* near/2 prescrib*):ti,ab
#279 #214 OR #215 OR #216 OR #217 OR #218 OR #219 OR #220 OR #221 OR #222 OR #223 OR #224 OR #225 OR #226 OR #227 OR #228 OR #229 OR #230 OR #231 OR #232 OR #233 OR #234 OR #235 OR #236 OR #237 OR #238 OR #239 OR #240 OR #241 OR #242 OR #243 OR #244 OR #245 OR #246 OR #247 OR #248 OR #249 OR #250 OR #251 OR #252 OR #253 OR #254 OR #255 Or #256 OR #257 OR #258 OR #259 OR #260 OR #261 OR #262 OR #263 OR #264 OR #265 OR #266 OR #267 OR #268 OR #269 OR #270 OR #271 OR #272 OR #273 OR #274 OR #275 OR #276 OR #277 OR #278
#289 MeSH descriptor: [Nursing Homes] explode all trees
#290 MeSH descriptor: [Homes for the Aged] explode all trees
#291 MeSH descriptor: [Residential Facilities] explode all trees
#292 MeSH descriptor: [Long-Term Care] explode all trees
#293 aged care facilit*:ti,ab
#294 nursing facilit*:ti,ab
#295 nursing home*:ti,ab
#296 long term care facilit*:ti,ab
#297 homes for the aged:ti,ab
#298 residential facilit*:ti,ab
#299 residential home:ti,ab
#300 RACF:ti,ab
#301 residential aged care facilit*:ti,ab
#302 aged care:ti,ab
#303 extended care:ti,ab
#304 residential aged care:ti,ab
#305 #289 OR #290 OR #291 OR #292 OR #293 OR #294 OR #295 OR #296 OR #297 OR #298 OR #299 OR #300 OR #301 OR #302 OR #303 OR #304
#308 MeSH descriptor: [Antipsychotic Agents] this term only
#309 MeSH descriptor: [Benzodiazepines] this term only
#310 MeSH descriptor: [Antidepressive Agents] this term only
#311 psychotropic*:ti,ab
#312 benzodiazepine*:ti,ab
#313 antidepressant*:ti,ab
#314 antipsychotic*:ti,ab
#315 anxiolytic*:ti,ab
#316 antianxiety drug*:ti,ab
#317 muscle relaxant*:ti,ab
#318 minor tranquilizer*:ti,ab
#319 #308 OR #309 OR #310 OR #311 OR #312 OR #313 OR #314 OR #315 OR #316 OR #317 OR #318
#320 #18 OR #305
#321 #279 AND #319
#322 #320 AND #321 AND #97

Equity Search Strategy

Equity Search Strategy - OVID Medline and Embase

1. (equit* or inequit* or inequalit* or disparit* or equality).tw.
2. (ethnic* or race or racial* or racis*).tw.
3. (Culturally adj2 (linguistically or diverse)).tw.
4. cultural anthropology/
5. cultural competence/
6. cultural diversity/
7. cultural factor/
8. multilingualism/
9. language/
10. ((cultur* or linguistic* or language*) adj3 (competenc* or understanding or knowledg* or expertise or skill* or sensitiv* or aware* or appropriate* or acceptab* or safe* or humility or service* or communicat* or barrier* or divers* or comparison* or identity or specific or background* or value* or belief*)).tw.
11. cultural nursing/
12. (intercultural* or inter cultural or transcultural* or trans cultural or cross cultural or crosscultural or multicultural* or multi cultural* or multiethnic or bicultural or bi cultural or multilingual* or multi lingual* or bilingual or bi lingual).tw.
13. migration/
14. migrant/
15. refugee/
16. exp population group/
17. minority group/
18. minority health/

19. (immigrant* or migrant* or refugee* or ethnic* or racial or indigenous or aborigin* or second language* or ((language or english) and proficien*) or interpreter*).tw.
20. non english.tw.
21. ((social* or socio-economic or socioeconomic or economic or structural or material) adj3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)).tw.
22. (health adj3 (gap* or gradient* or hierarch*)).tw.
23. vulnerable population/
24. socioeconomics/
25. health care disparity/
26. (SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or educational level or educational attainment or well educated or better educated or unemploy* or home owner* or tenure or affluen*).tw.
27. Oceanic ancestry group/
28. torres strait* islander*.tw.
29. tasmania.tw.
30. new south wales.tw.
31. victoria.tw.
32. queensland.tw.
33. (aborigin*OR indigenous or torres strait* islander*).tw.
34. australia*.tw.
35. 29 or 30 or 31 or 32 or 34
36. 33 and 35
37. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 36
38. exp Australia/
39. 37 and 38

Preferences and Values Search Strategy

Preferences and Values Search Strategy - OVID Medline and Embase

1. exp Dementia/
2. Wernicke Encephalopathy/
3. Delirium, Dementia, Amnestic, Cognitive Disorders/
4. dement*.mp.
5. alzheimer*.mp.
6. (lewy* adj2 bod*).mp.
7. (chronic adj2 cerebrovascular).mp.
8. ("organic brain disease" or "organic brain syndrome").mp.
9. ("normal pressure hydrocephalus" and "shunt*").mp.
10. "benign senescent forgetfulness".mp.
11. (cerebr* adj2 deteriorat*).mp.
12. (cerebral* adj2 insufficient*).mp.
13. (pick* adj2 disease).mp.
14. (creutzfeldt or jcd or cjd).mp.
15. huntington*.mp.
16. binswanger*.mp.
17. korsako*.mp.
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. Patient Advocacy/
20. empower$.tw.
21. informed choice$.tw.
22. Decision Making/
23. Choice Behavior/
24. consumer participation.tw.
25. ((patient$ or consumer$ or client$) adj3 (participat$ or involv$ or advoca$ or decide$ or decision$ or choice$)).tw.
26. Consumer Health Information/
27. information dissemination/
28. (preference* adj2 value*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
29. consumer*.tw.
30. resident*.tw.
31. (consumer* adj1 preference* adj2 value*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
32. (patient* adj1 preference* adj2 value*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading

word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

33. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32
34. Benzodiazepines/
35. Antipsychotic Agents/
36. Antidepressive Agents/
37. Psychotropic Drugs/
38. (antipsychotic* or psychotropic*or neuroleptic* or benzodiazepine* or anxiolytic* or antianxiety drug* or minor tranquilizer* or muscle relaxant* or antidepressant* or anti-depressant*).tw.
39. 34 or 35 or 36 or 37 or 38
40. 18 and 33 and 39
41. exp Australia/
42. 40 and 41

Appendix 4 – Abbreviations

BPSD: Behavioural and psychological symptoms of dementia
CALD: Culturally and linguistically diverse
CBT: Cognitive behavioural therapy
CI/s: Confidence interval/s
CMAI: Cohen-Mansfield Agitation Inventory/Index
CSDD: Cornell scale for depression in dementia
DBI: Drug Burden Index
DCRC: Dementia Centre for Research Collaboration
DEMQOL: Dementia Quality of Life
FGA/s: First-generation antipsychotic/s
GP/s: General practitioner/s
HR: Hazard ratio
MAI: Medication appropriateness index
MD: Mean difference
NHMRC: National Health and Medical Research Council
NPI: Neuropsychiatric inventory
NPI-NH: Neuropsychiatric inventory – Nursing Home version
NPI-Q: Neuropsychiatric inventory – Questionnaire
OR: Odds ratio
PBS: Pharmaceutical Benefits Scheme
PRN: “pro re nata”/when required/as needed
RACF/s: Residential aged care facility/facilities
RCT: Randomised controlled trial
RR: Risk ratio/relative risk
SGA/s: Second-generation antipsychotic/s
SSRI: Selective serotonin re-uptake inhibitor
SMD: Standard mean difference

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