Pharmacotherapy for BPSD

- If pharmacological treatments are required, they should be introduced sequentially and cautiously— Concurrent use of multiple agents is **NOT RECOMMENDED**.
- For more information on antipsychotic use to manage BPSD, see Considerations for antipsychotic use in BPSD.
- For more information on deprescribing, see Deprescribing antipsychotics.

A note on antipsychotic use:
When prescribing an antipsychotic agent for managing BPSD, prescriptions should be for the **LOWEST** dose that is clinically effective and for the **SHORTEST** amount of time.

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Agitation **Pharmacological treatment for symptoms of agitation in dementia should only be considered if symptoms are unresponsive to psychosocial interventions.** *Citalopram may be helpful, particularly in moderate agitation or when agitation coexists with other BPSD symptoms. For more severe cases, risperidone can be used short-term, with aripiprazole or brexpiprazole as alternatives if not tolerated. Quetiapine is an option when extrapyramidal symptoms are a concern. In more refractory agitation cases, carbamazepine or nabilone may be considered (with specialist consult), while lorazepam, olanzapine or haloperidol should be reserved for emergency use or when other treatments are ineffective.*				
Atypical antipsychotic agents				
Aripiprazole (Abilify®) 2 mg, 5 mg, 10 mg, 15 mg, 20 mg, 30 mg tablets	Not indicated by Health Canada for use in older adult patients with dementia. Consider for severe agitation (alternative to risperidone). May be more likely to cause akathisia, less likely to cause weight gain compared to other antipsychotic medications. Half-life: 146h (poor CYP2D6 metabolizer) 75h (extensive CYP2D6 metabolizers)	**Side effects:** **CNS**: Akathisia, sedation, restlessness, extrapyramidal disorder, fatigue, blurred vision **CV**: Hypertension, hypotension, syncope **GI**: Nausea, constipation, dyspepsia, vomiting, stomach discomfort, GERD, dysphagia, dry mouth **Other**: Weight loss, toothache, hyperglycemia, elevated LFTs, musculoskeletal stiffness, dyspnea, hyperhidrosis **Warnings:** Older adult patients with dementia treated with antipsychotic drugs are at an increased risk of death (↑ stroke risk, aspiration pneumonia). Caution in QT prolongation, orthostatic hypotension, bradycardia, syncope, ↑ seizure risk, weight gain, diabetes, dyslipidemia, EPS & tardive dyskinesia, NMS, venous thromboembolism, skin reactions (SJS, DRESS), suicidal ideation, and impulse-control disorders (pathological gambling, compulsive eating/spending/sexual urges).	**Initial**: 2.5 mg/day (PM) **Usual**: 5-10 mg/day (PM) **Max**: 12.5 mg/day (PM) **Administration**: Tablets can be crushed. May be an occupational hazard to person preparing medication and protective measures may be required. **Hepatic:** No dosage adjustment is required in patients with hepatic impairment. **Renal**: No dosage adjustment is required in patients with renal impairment.	Brand: $122-185 Generic: $40-55 ODB: ✓ NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Brexpiprazole (Rexulti®) 0.25 mg, 0.5 mg, 1 mg, 2 mg, 3 mg, 4 mg tablets	Health Canada indication for the symptomatic management of agitation associated with dementia of the Alzheimer's type in patients with aggressive behaviours, unresponsive to non-pharmacological approaches. Consider for severe agitation (alternative to risperidone). Half-life: 91h	**Side effects:** **CNS:** Akathisia, myalgia, tremor, dizziness, sedation, restlessness **CV:** Orthostatic hypotension, increased blood pressure **GI**: constipation, dyspepsia, nausea, vomiting **Metabolic**: Weight gain, increased appetite **Other**: Muscle stiffness **Warnings:** Older adult patients with dementia treated with antipsychotic drugs are at an increased risk of death (↑ stroke risk, aspiration pneumonia). Caution in QT prolongation, orthostatic hypotension, bradycardia, syncope, ↑ seizure risk, weight gain, diabetes, dyslipidemia, EPS & tardive dyskinesia, NMS, venous thromboembolism, skin reactions (SJS, DRESS), suicidal ideation, and impulse-control disorders (pathological gambling, compulsive eating/spending/sexual urges).	**Initial:** 0.5 mg/day for one week Then ↑ to 1 mg/day for one week Then ↑ to usual dose of 2 mg/day **Usual:** 2 mg/day After at least two weeks at 2 mg/day, the dose can be further ↑ to the maximum 3 mg/day if clinically warranted. **Max:** 3 mg/day To minimize the risk of adverse events, the lowest effective dose should be used. **Administration:** Manufacturer recommends swallowing tablets whole. **Hepatic:** For moderate to severe hepatic impairment (Child-Pugh B or C), the maximum recommended dose for AD is reduced to 2mg/day. **Renal:** For moderate, severe, or end-stage renal impairment (CrCl <60 mL/min), the maximum recommended dose for AD is reduced to 2 mg/day.	Brand: $129 Generic: N/A ODB: ✓ NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Risperidone (Risperdal®) 0.25 mg, 0.5 mg, 1 mg, 2 mg, 3 mg, 4 mg tablets (Risperidone ODT) 0.5, 1, 2, 3, 4mg orally disintegrating tablets (**ODT)** (Risperidone Oral Solution) 1 mg/mL	Health Canada indication for the short-term symptomatic management of aggression or psychotic symptoms in patients with severe dementia of the Alzheimer type that is unresponsive to non-pharmacological approaches or other treatments and when there is a risk of harm to self or others. Consider for severe agitation. Most likely to cause extrapyramidal symptoms (EPS) of antipsychotic agents, especially at higher doses. Half-life: 20-24h	**Side effects:** **CNS:** Somnolence, EPS, agitation, lethargy, falls **CV:** Orthostatic hypotension, tachycardia **GI:** Nausea, vomiting, constipation, dry mouth, increased salivation, dyspepsia **Metabolic:** Weight gain, increased appetite, hyperprolactinemia **Other:** Peripheral edema, muscle stiffness, urinary tract infection, cough **Warnings:** Older adult patients with dementia treated with antipsychotic drugs are at an increased risk of death (↑ stroke risk). Caution in QT prolongation, orthostatic hypotension, bradycardia, syncope, ↑ seizure risk, weight gain, diabetes, dyslipidemia, EPS & tardive dyskinesia, neuroleptic malignant syndrome (NMS), skin reactions (SJS, DRESS), venous thromboembolism.	**Initial**: 0.25 mg BID. Dosage should be adjusted by increments of 0.25 mg per day, approximately every 2 to 4 days. **Usual**: 0.5 mg BID (1.0 mg/day) **Max:** 1.0 mg BID (2.0 mg/day) **Administration:** Tablets can be dispersed in 10-20 mL of water. May be an occupational hazard to person preparing medication and protective measures may be required *(change to ODT or oral solution formulations if appropriate)*. **Hepatic:** ↑ plasma concentration of risperidone in hepatic impairment, which may lead to an enhanced pharmacological effect. Lower starting doses and slower titration are recommended. **Renal:** Reduced clearance in moderate to severe impairment leading to increased drug exposure. Lower starting doses and slower titration are recommended.	Brand: D/C Generic: Tab: $16-40 ODT: $30-80 Solution: $36-60 ODB: ✓ NIHB: ✓ (except ODT)

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Quetiapine (Seroquel®) 25 mg, 100 mg, 200 mg, 300 mg immediate-release **(IR)** tablets (Seroquel® XR) 50, 150, 200, 300, 400 mg extended-release **(XR)** tablets	Not indicated by Health Canada for use in older adult patients with dementia. Consider for severe agitation (if EPS a concern with other antipsychotic options). Very sedating. Least likely to cause extrapyramidal symptoms (EPS), could be considered in Parkinson's and Lewy body dementia. Half-life: 6-7h	**Side effects:** **CNS:** Somnolence, dizziness, extrapyramidal symptoms **CV:** Orthostatic hypotension, tachycardia, palpitations **GI**: Dry mouth, constipation, dyspepsia, nausea, vomiting, dysphagia **Metabolic**: Weight gain, increased appetite, hyperglycemia, hypercholesterolemia, hypertriglyceridemia **Other**: Withdrawal symptoms, decreased haemoglobin **Warnings:** Older adult patients with dementia treated with antipsychotic drugs are at an increased risk of death (↑ stroke risk). Caution in QT prolongation, orthostatic hypotension, bradycardia, syncope, ↑ seizure risk, weight gain, diabetes, dyslipidemia, EPS & tardive dyskinesia, neuroleptic malignant syndrome (NMS), venous thromboembolism, skin reactions (SJS, DRESS), rhabdomyolysis, suicidal ideation.	**Initial:** 25 mg/day BID (once daily if XR) **Usual:** 100-200 mg/day BID (once daily if XR) **Max:** 300 mg/day BID (once daily if XR) **Administration:** IR tablets can be crushed; bad taste. If taking XR formulation, change to equivalent IR dose and crush. **Switching from IR to XR formulations:** If treated with divided doses of quetiapine IR, may be switched to XR formulation at the equivalent total daily dose taken once daily. Dosing for frail patients should be reduced by half. **Hepatic:** ↓ clearance in hepatic impairment; patients with mild impairment (Child-Pugh A), should start at 25 mg/day, with slow titration in 25-50 mg increments based on tolerance; use with caution in moderate to severe impairment (Child-Pugh B or C) due to lack of pharmacokinetic data. **Renal:** Limited clinical data, caution is advised, especially during the initial dosing period.	Brand: IR: $30-148 XR: $49-206 Generic: IR: $15-26 XR: $21-57 ODB: ✓ NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Olanzapine (Zyprexa®) 2.5 mg, 5 mg, 7.5 mg, 10 mg, 15 mg, 20 mg, tablets (Zyprexa® Zydis®) 5 mg, 10 mg, 15 mg, 20 mg, orally disintegrating tablets **(ODT)** (Zyprexa® Intramuscular) 10 mg, vial	Not indicated by Health Canada for use in older adult patients with dementia. Potential use as short-term emergency treatment of severe agitation. Most likely to cause weight gain and metabolic side effects. Fewer extrapyramidal side effects (EPS) than risperidone. More sedating than risperidone. Half-life: ~33h (ranges from 21-54h based on smoking status, gender and age)	**Side effects:** **CNS:** Drowsiness, dizziness, restlessness, amnesia, confusion **CV:** Orthostatic hypotension **GI:** Increased appetite, constipation, dry mouth, abdominal distention **Other:** Weight gain, fluid retention, increased salivation, abnormal LFTs, pyrexia, arthralgia, epistaxis **Warnings:** Older adult patients with dementia treated with antipsychotic drugs are at an increased risk of death (↑ stroke risk, aspiration pneumonia). Caution in ↑ weight gain, diabetes, dyslipidemia, hyperprolactinemia, QT prolongation, orthostatic hypotension, bradycardia, syncope, ↑ seizure risk, EPS & tardive dyskinesia, neuroleptic malignant syndrome (NMS), venous thromboembolism, skin reactions (SJS, DRESS), suicidal ideation.	**Initial:** 5 mg/day **Usual:** 5-20 mg/day When indicated, dose escalation should be performed with caution. **Max:** 20 mg/day **Administration:** If crushing is required, switch to the ODT formulation, as the regular tablet can irritate the skin and pose an occupational hazard to the person preparing it. **Hepatic**: Olanzapine is associated with aminotransferase (ALT/AST) elevations and rare cases of hepatitis and hepatic failure. Caution should be exercised in patients with hepatic impairment, with liver function monitoring recommended. **Renal:** No major alterations in pharmacokinetics were observed in renal impairment but caution is advised due to limited clinical experience.	Brand: Tab: $89-637 ODT: $161-643 Vial: $1195-2376 Generic: Tab: $19-60 ODT: $25-264 Vial: N/A ODB: ✓ NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Antidepressant				
Citalopram (Celexa®) 10 mg, 20 mg, 40 mg, tablets **Escitalopram (Cipralex®) is not recommended due to negative effects on BPSD symptoms.**	Health Canada indication for the symptomatic relief of depressive illness in adults. Consider for moderate severity agitation. May take weeks to see therapeutic benefit. Half-life: 36-90h (older adults) 30-42h (adults)	**Side effects:** **CNS**: Drowsiness, insomnia, dizziness, headache, fatigue **CV:** Palpitations, tachycardia, orthostatic hypotension **GI:** Nausea, dry mouth, diarrhea, constipation, vomiting, dyspepsia **Other**: Increased sweating, fatigue, tremor, rhinitis, weight changes, abnormal dreams, sexual dysfunction **Warnings:** Caution in QT prolongation, suicidal ideation, serotonin syndrome, abnormal bleeding, hyponatremia, seizure risk, mania/hypomania activation, elderly (fall risk, SIADH), poor CYP2C19 metabolizers, drug interactions (MAOIs, serotonergic drugs, QT-prolonging agents). **Contraindications:** Contraindicated with monoamine oxidase inhibitors (MAOIs) and pimozide. Contraindicated in patients with known QT interval prolongation or with congenital long QT syndrome.	**Initial**: 10 mg/day Titrate ↑ depending on patient response and tolerability. **Usual:** 20 mg/day **Max**: 30 mg/day **Efficacy may take up to 9 weeks.** **Administration:** Tablets can be crushed or dispersed in 10-20 mL of water. **Hepatic:** Dose should be ↓ in mild to moderate impairment (Child-Pugh A or B), with a maximum recommended dose of 20 mg/day; use with caution in severe impairment (Child-Pugh C) due to prolonged drug half-life. **Renal:** No dosage adjustment is required for mild to moderate impairment, but caution is advised in severe impairment (CrCl <30 mL/min) due to lack of data.	Brand: $77-101 Generic: $17-28 ODB: ✓ (except 10mg) NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Anticonvulsant/Antimanic				
Carbamazepine (Tegretol®) 100 mg, 200 mg chewable tablets 200 mg immediate-release (IR) tablets (Tegretol® CR) 200 mg, 400 mg controlled-release (CR) tablets (Tegretol® Suspension) 100 mg/5 mL, oral suspension	Health Canada indication for use as an anticonvulsant drug. Teratogenic in nature and not to be handled by women of childbearing age. May be an occupational hazard to person preparing medication and protective measures may be required. Could be considered for severe agitation unresponsive to other agents. May require specialist referral (e.g., geriatric psychiatry) before consideration for chronic use. Half-life: After single dose: 36h After repeated doses: 16-24h In conjunction with CYP 3A4 enzyme inducers: 9-10h	**Side effects:** **CNS:** Drowsiness, headache, unsteadiness on feet, diplopia, dizziness **GI:** nausea, vomiting, dry mouth, constipation, diarrhea **Other:** allergic skin reactions, anemia, weight gain, edema, tinnitus, muscle weakness **Warnings:** Caution in QT prolongation, bradycardia, AV block, ↑ seizure risk, bone marrow suppression, hyponatremia, hypothyroidism, ↑ risk of dermatologic reactions (SJS/TEN, DRESS, maculopapular rash, particularly in HLA-B*1502 carriers), suicidal ideation, neurotoxicity (ataxia, dizziness, diplopia, somnolence), hepatic porphyria, drug interactions (enzyme inducer - ↓ efficacy of many drugs including oral contraceptives, anticoagulants, antipsychotics, antivirals). **Contraindications:** Hypersensitivity to carbamazepine, tricyclic compounds (e.g., amitriptyline, imipramine), bone marrow suppression history, hepatic disease, hepatic porphyria, serious blood disorders, AV heart block, concurrent or recent (≤14 days) MAOI use, concurrent itraconazole or voriconazole use.	Dose selection for older adult patients should be approached with caution. **Initial:** 100 mg/day, taken in divided doses. Dose may be gradually ↑ until patient symptomatology is controlled, or a total daily dose of 400 mg is achieved. **Usual:** 300-400 mg/day, taken in divided doses. **Max:** 400 mg/day, taken in divided doses. Dosing for frail patients should be reduced by half. **Administration:** IR tablets can be crushed or dispersed in 10-20 mL of water. Dosage should be taken with meals. **Hepatic:** Contraindicated in hepatic disease as drug may cause hepatotoxicity and requires liver function monitoring due to its enzyme-inducing effects. **Renal**: Impairment may cause hyponatremia and drug accumulation, requiring renal function monitoring, especially in the elderly or those on diuretics.	Brand: Tab: $23-54 Chew: N/A CR: $33-55 Susp: $32-88 Generic: Tab: $17-28 Chew: $19-35 CR: $26-38 Solution: $23-51 ODB: ✓ NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Synthetic cannabinoids				
Nabilone (Cesamet®) 0.25 mg, 0.5 mg, 1 mg capsules	Not indicated by Health Canada for use in older adult patients with dementia. Could be considered for severe agitation unresponsive to other agents. May require specialist referral (e.g., geriatric psychiatry) before consideration for chronic use. Half-life: 2h	**Side effects:** **CNS:** Drowsiness, vertigo, psychological high, depression, ataxia, blurred vision, sensation disturbance, headache, euphoria, hallucinations, nightmares, distortion in the perception of time, confusion, dissociation, dysphoria, psychotic reactions, seizures, tremors **CV:** Orthostatic hypotension, tachycardia, syncope **GI:** Dry mouth, anorexia **Other:** Asthenia **Warnings:** May impair mental and physical abilities, effects can persist 48–72 hours after stopping, may cause hallucinations, euphoria, confusion, dissociation, depression, psychosis, and emotional ability. **Contraindications:** Known sensitivity to cannabis or other cannabinoid agents or a history of psychotic reactions.	**Initial:** 0.5 mg once daily (PM) **Usual:** 0.5-1 mg BID **Max:** 4 mg/day (mean therapeutic dose in studies ~1.6 mg/day in older adults). **Hepatic:** Use with extreme caution in patients with severe liver dysfunction due to risk of prolonged effects or accumulation. **Renal:** No specific renal dosing guidance is provided but use with caution in renal impairment.	Brand: $162-1116 Generic: $110-497 ODB: ✓ (except 0.25 mg) NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Typical antipsychotic agents				
Haloperidol (Haldol®) 0.5 mg, 1 mg, 2 mg, 5 mg, 10 mg tablets Haloperidol intramuscular **(IM) injection** 5 mg/mL	Not indicated by Health Canada for use in older adult patients with dementia. Low-dose, short-term use may be considered under close monitoring. Avoid in Lewy Body Dementia or Parkinson's Disease Dementia due to high EPS risk. Generally, should be avoided in older adults due to ↑ risk of mortality as the dose is increased compared to atypical antipsychotics. Compared to atypical antipsychotics: ↑ risk of EPS and neuroleptic malignant syndrome, ↓ risk of anticholinergic effects, ↓ sedation, minimal weight gain. Half-life: Oral: 20.7h (range from 16.1 – 25.3h) IM: 21h (range from 13 -35h)	**Side effects:** **CNS:** High risk of EPS, tardive dyskinesia, lethargy, and neuroleptic malignant syndrome; may also lower seizure threshold **CV:** Risk of QT prolongation, torsade de pointes, and sudden death **GI:** Nausea, vomiting, diarrhea, heartburn, dry mouth, decreased appetite, dehydration **Metabolic:** Weight changes, hyperprolactinemia **Other:** Urinary incontinence, sweating, skin changes, nasal congestion **Warnings:** Older adult patients with dementia treated with antipsychotic drugs are at an increased risk of death (↑ stroke risk, aspiration pneumonia). **Contraindications:** Intravenous administration, comatose states, CNS depression, Parkinson's syndrome (except for levodopa-induced dyskinesias).	**Initial:** 0.25-0.5 mg PO once or twice daily 0.5-1 mg IM as needed every hour until desired result achieved (do not exceed max dose) **Usual:** Lowest effective dose, shortest duration **Max:** 2 mg/day in older adults **Hepatic:** Use cautiously in patients with liver dysfunction due to risk of hepatotoxicity and prolonged drug clearance. **Renal:** Use cautiously in severe renal dysfunction; monitor closely.	Brand: N/A Generic: Tab: $18-24 IM: $28-76 ODB: ✓ NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Benzodiazepine				
Lorazepam (Ativan®) 0.5 mg, 1 mg, 2 mg, oral tablets (Ativan® SL) 0.5 mg, 1 mg, 2 mg sublingual **(SL)** tablets Lorazepam intramuscular **(IM) injection** 4 mg/mL	Health Canada indication for short-term relief of manifestations of excessive anxiety in patients with anxiety neurosis. Indicated as an adjunct for the relief of excessive anxiety. Potential use as short-term emergency treatment of severe agitation. Half-life: Oral: 12-15h IM: 12-15h (peak plasma concentrations occur 60-90min post-injection)	**Side effects:** **CNS:** Drowsiness, confusion, dizziness, fatigue, amnesia, sedation, ataxia, depression, tremor, headache, visual disturbances (diplopia, blurred vision) **GI:** Nausea, constipation, change in appetite **Other:** Respiratory depression, worsening COPD, apnea, muscle weakness, hypersensitivity reactions, SIADH, hypothermia **Warnings:** Caution in CNS depression, addiction, abuse, and dependence, withdrawal risk (seizures, delirium, psychosis, rebound anxiety/insomnia, autonomic dysfunction), paradoxical reactions (aggression, agitation, hallucinations, behavioral changes), ↑ fall and fracture risk in elderly, cognitive impairment, myasthenia gravis exacerbation, respiratory depression, suicidal ideation, and concomitant CNS depressant use (opioids, alcohol, sedatives, antidepressants, antipsychotics, anticonvulsants, muscle relaxants, anesthetics). **Contraindications:** Myasthenia gravis, acute narrow-angle glaucoma, severe respiratory insufficiency, sleep apnea syndrome, concurrent use with opioids or other CNS depressants in high-risk patients.	**Initial:** 0.5 mg/day Dosage should be carefully and gradually adjusted by 0.5 mg, depending upon tolerance and response. **Usual:** 2-3 mg/day taken in divided doses **Max:** 6 mg/day taken in divided doses **Administration:** Tablets can be dispersed in 10-20 mL of water (*change to SL if appropriate*). **Hepatic:** Use lowest effective dose in mild to moderate hepatic impairment (Child-Pugh A or B); caution in severe hepatic impairment (Child-Pugh C) due to risk of hepatic encephalopathy. **Renal:** Use lowest effective dose in mild to moderate renal impairment (CrCl 30-60 mL/min); effect may be prolonged.	Brand: Tab: $15-22 SL: $18-41 Generic: Tab: $15-22 SL: $17-35 IM: $713 ODB: ✓ (except SL) NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage
Psychosis **Pharmacological treatment for symptoms of psychosis in dementia should <u>only</u> be considered if symptoms are unresponsive to psychosocial interventions.** Citalopram may be useful for managing moderate symptoms. In more severe or treatment-resistant cases, risperidone or aripiprazole may be considered.				
Antidepressants				
Citalopram (Celexa®) 10 mg, 20 mg, 40 mg tablets **Escitalopram (Cipralex®) is not recommended due to negative effects on BPSD symptoms.**	Health Canada indication for the symptomatic relief of depressive illness in adults. May be considered for moderate symptoms of psychosis. May take weeks to see therapeutic benefit. Half-life: 36-90h (older adults) 30-42h (adults)	**Side effects:** **CNS**: Drowsiness, insomnia, dizziness, headache, fatigue **CV:** Palpitations, tachycardia, orthostatic hypotension **GI:** Nausea, dry mouth, diarrhea, constipation, vomiting, dyspepsia **Other**: Increased sweating, fatigue, tremor, rhinitis, weight changes, abnormal dreams, sexual dysfunction **Warnings:** Caution in QT prolongation, suicidal ideation, serotonin syndrome, abnormal bleeding, hyponatremia, seizure risk, mania/hypomania activation, elderly (fall risk, SIADH), poor CYP2C19 metabolizers, and drug interactions (MAOIs, serotonergic drugs, QT-prolonging agents). **Contraindications:** Contraindicated with MAOIs and pimozide. Contraindicated in patients with known QT interval prolongation or with congenital long QT syndrome.	**Initial**: 10 mg/day Titrate ↑ depending on patient response and tolerability. **Usual:** 20 mg/day **Max**: 30 mg/day **Efficacy may take up to 9 weeks.** **Administration:** Tablets can be crushed or dispersed in 10-20 mL of water. **Hepatic:** Dose should be ↓ in mild to moderate impairment (Child-Pugh A or B), with a maximum recommended dose of 20 mg/day; use with caution in severe impairment (Child-Pugh C) due to prolonged drug half-life. **Renal:** No dosage adjustment is required for mild to moderate impairment, but caution is advised in severe impairment (CrCl <30 mL/min) due to lack of data.	Brand: $77-101 Generic: $17-28 ODB: ✓ (except 10mg) NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Atypical antipsychotic agents				
Aripiprazole (Abilify®) 2 mg, 5 mg, 10 mg, 15 mg, 20 mg, 30 mg tablets	Not indicated by Health Canada for use in older adult patients with dementia. Consider for severe psychosis or if citalopram is ineffective or not tolerated. May be more likely to cause akathisia, less likely to cause weight gain compared to other antipsychotic medications. Half-life: 146h (poor CYP2D6 metabolizer) 75h (extensive CYP2D6 metabolizers)	**Side effects:** **CNS:** Akathisia, sedation, restlessness, extrapyramidal disorder, fatigue, blurred vision **CV:** Hypertension, hypotension, syncope **GI:** Nausea, constipation, dyspepsia, vomiting, stomach discomfort, GERD, dysphagia, dry mouth **Other:** Weight loss, toothache, hyperglycemia, elevated LFTs, musculoskeletal stiffness, dyspnea, hyperhidrosis **Warnings:** Older adult patients with dementia treated with antipsychotic drugs are at an increased risk of death (↑ stroke risk, aspiration pneumonia). Caution in QT prolongation, orthostatic hypotension, bradycardia, syncope, ↑ seizure risk, weight gain, diabetes, dyslipidemia, EPS & tardive dyskinesia, NMS, venous thromboembolism, skin reactions (SJS, DRESS), suicidal ideation, impulse-control disorders (pathological gambling, compulsive eating/spending/sexual urges).	**Initial:** 2.5 mg/day (PM) **Usual:** 5-10 mg/day (PM) **Max:** 12.5 mg/day (PM) **Administration:** Tablets can be crushed. May be an occupational hazard to person preparing medication and protective measures may be required. **Hepatic:** No dosage adjustment is required in patients with hepatic impairment. **Renal:** No dosage adjustment is required in patients with renal impairment.	Brand: $122-185 Generic: $40-55 ODB: ✓ NIHB: ✓
Medication	**Considerations**	**Adverse reactions, warnings, and contraindications**	**Dosing**	**Cost and coverage (1-month)**

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Risperidone (Risperdal®) 0.25 mg, 0.5 mg, 1 mg, 2 mg, 3 mg, 4 mg tablets (Risperidone ODT) 0.5, 1, 2, 3, 4 mg orally disintegrating tablets **(ODT)** (Risperidone Oral Solution) 1 mg/mL	Health Canada indication for the short-term symptomatic management of aggression or psychotic symptoms in patients with severe dementia of the Alzheimer type that is unresponsive to non-pharmacological approaches or other treatments and when there is a risk of harm to self or others. Consider for severe psychosis or if citalopram is ineffective or not tolerated. Most likely to cause EPS of antipsychotic agents, especially at higher doses. Half-life: 20-24h	**Side effects:** **CNS:** Somnolence, EPS, agitation, lethargy, falls **CV:** Orthostatic hypotension, tachycardia **GI:** Nausea, vomiting, constipation, dry mouth, increased salivation, dyspepsia **Metabolic:** Weight gain, increased appetite, hyperprolactinemia **Other:** Peripheral edema, muscle stiffness, urinary tract infection, cough **Warnings:** Older adult patients with dementia treated with antipsychotic drugs are at an increased risk of death (↑ stroke risk). Caution in QT prolongation, orthostatic hypotension, bradycardia, syncope, ↑ seizure risk, weight gain, diabetes, dyslipidemia, EPS & tardive dyskinesia, neuroleptic malignant syndrome (NMS), skin reactions (SJS, DRESS), venous thromboembolism.	**Initial**: 0.25 mg BID Dosage should be adjusted by increments of 0.25 mg per day, approximately every 2 to 4 days. **Usual**: 0.5 mg BID (1.0 mg/day) **Max:** 1.0 mg BID (2.0 mg/day) **Administration:** Tablets can be dispersed in 10-20 mL of water. May be an occupational hazard to person preparing medication and protective measures may be required *(change to ODT or oral solution formulations if appropriate)*. **Hepatic:** ↑ plasma concentration of risperidone in hepatic impairment, which may lead to an enhanced pharmacological effect. Lower starting doses and slower titration are recommended. **Renal:** Reduced clearance in moderate to severe impairment, leading to increased drug exposure. Lower starting doses and slower titration are recommended.	Brand: D/C Generic: Tab: $16-40 ODT: $30-80 Solution: $36-60 ODB: ✓ NIHB: ✓ (except ODT)

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Depression **Pharmacological treatment for depressive symptoms in dementia should <u>only</u> be considered if symptoms are unresponsive to psychosocial interventions.** Sertraline, duloxetine, and citalopram are commonly used options, with more evidence supporting **s**ertraline and duloxetine's use in older adults; selection should be guided by side effect profiles and coexisting BPSD symptoms.				
Antidepressants				
Sertraline (Zoloft®) 25 mg, 50 mg, 100 mg capsules	Health Canada indication for symptomatic relief of depressive illness. Half-life: 26h	**Side effects:** **CNS:** Insomnia, somnolence, tremor, dizziness **GI**: Nausea, loose stools/diarrhea, dyspepsia **Other:** Male sexual dysfunction, dry mouth, increased sweating **Warnings:** Caution in QT prolongation, syncope, serotonin syndrome, suicidal ideation, abnormal bleeding, hyponatremia, seizure risk, mania/hypomania activation, bone fracture risk, discontinuation symptoms, angle-closure glaucoma, cognitive and motor impairment, impulse-control disorders (gambling, compulsive behavior), diabetes (loss of glycemic control, new-onset diabetes risk). **Contraindications:** Contraindicated with MAOIs and pimozide.	**Initial:** 50 mg/day **Usual:** 50-200 mg/day. A gradual ↑ in dosage may be considered if no clinical improvement is observed. Dosage changes should be made at intervals of ≥ 1 week. **Max:** 200 mg/day **Administration:** Capsules can be opened and sprinkled or opened and dispersed in 10-20 mL of water. **Hepatic:** Use with caution in mild hepatic impairment; dose reduction or less frequent dosing should be considered due to prolonged half-life. **Renal:** No specific renal dose adjustment required but use with caution in severe impairment.	Brand: $46-155 Generic: $18-33 ODB: ✓ NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Duloxetine 30 mg, 60 mg delayed-release capsules	Health Canada indication for symptomatic relief of major depressive disorder (MDD). Half-life: 12.1h (ranges from 8.1 - 17.4h)	**Side effects:** **CNS:** Fatigue, somnolence, dizziness, tremor, anxiety, insomnia, blurred vision **GI:** Dry mouth, nausea, constipation, diarrhea, vomiting **Other**: Decreased appetite, decreased libido, anorgasmia, erectile dysfunction, hot flushes, increased sweating **Contraindications:** Concurrent or recent (≤14 days) MAOI use, concomitant use with thioridazine, uncontrolled narrow-angle glaucoma, concurrent use with potent CYP1A2 inhibitors (e.g., fluvoxamine, ciprofloxacin).	**Initial:** 60 mg/day A starting lower dose of 30 mg/day may be considered for tolerability reasons in some patients. If starting at the lower dose, target dose of 60 mg/day should be achieved within 1-2 weeks. **Usual:** 60 mg/day **Max:** 60 mg/day **Administration:** Capsules can be opened and sprinkled in apple juice, apple sauce, but NOT chocolate pudding (pH affects enteric coating). **Hepatic:** Contraindicated in any hepatic impairment; 5-fold increase in drug exposure in moderate liver impairment (Child-Pugh Class B). **Renal:** Not recommended in severe renal impairment (CrCl <30 mL/min) or end-stage renal disease (ESRD) due to 2-fold increase in drug exposure.	Brand: $99-187 Generic: $25-37 ODB: ✓ NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Citalopram (Celexa®) 10 mg, 20 mg, 40 mg tablet **Escitalopram (Cipralex®) is not recommended due to negative effects on BPSD symptoms.**	Health Canada indication for the symptomatic relief of depressive illness in adults. May be used if comorbid BPSD symptoms present. Higher rates of side effects and worse cardiovascular safety profile in older adults compared to sertraline and duloxetine for depression. Half-life: 36-90h (older adults) 30-42h (adults)	**Side effects:** **CNS**: Drowsiness, insomnia, dizziness, headache, fatigue **CV:** Palpitations, tachycardia, orthostatic hypotension **GI:** Nausea, dry mouth, diarrhea, constipation, vomiting, dyspepsia **Other**: Increased sweating, fatigue, tremor, rhinitis, weight changes, abnormal dreams, sexual dysfunction **Warnings:** Caution in QT prolongation, suicidal ideation, serotonin syndrome, abnormal bleeding, hyponatremia, seizure risk, mania/hypomania activation, elderly (fall risk, SIADH), poor CYP2C19 metabolizers, and drug interactions (MAOIs, serotonergic drugs, QT-prolonging agents). **Contraindications:** Contraindicated with MAOI and pimozide. Contraindicated in patients with known QT interval prolongation or with congenital long QT syndrome.	**Initial**: 10 mg/day Titrate ↑ depending on patient response and tolerability. **Usual:** 20 mg/day **Max**: 30 mg/day **Administration:** Tablets can be crushed or dispersed in 10-20 mL of water. **Hepatic:** Dose should be ↓ in mild to moderate impairment (Child-Pugh A or B), with a maximum recommended dose of 20 mg/day; use with caution in severe impairment (Child-Pugh C) due to prolonged drug half-life. **Renal:** No dosage adjustment is required for mild to moderate impairment, but caution is advised in severe impairment (CrCl <30 mL/min) due to lack of data.	Brand: $77-101 Generic: $17-28 ODB: ✓ (except 10mg) NIHB: ✓

Anxiety **Pharmacological treatment for symptoms of agitation in dementia should <u>only</u> be considered if symptoms are unresponsive to psychosocial interventions**. Citalopram may be effective for managing moderate to severe symptoms, particularly when anxiety is persistent or distressing.				
Antidepressants				
Citalopram (Celexa®) 10 mg, 20 mg, 40 mg tablets **Escitalopram (Cipralex®) is not recommended due to negative effects on BPSD symptoms.**	Health Canada indication for the symptomatic relief of depressive illness in adults. May be used if comorbid BPSD symptoms present. Half-life: 36-90h (older adults) 30-42h (adults)	**Side effects:** **CNS**: Drowsiness, insomnia, dizziness, headache, fatigue **CV:** Palpitations, tachycardia, orthostatic hypotension **GI:** Nausea, dry mouth, diarrhea, constipation, vomiting, dyspepsia **Other**: Increased sweating, fatigue, tremor, rhinitis, weight changes, abnormal dreams, sexual dysfunction **Warnings:** Caution in QT prolongation, suicidal ideation, serotonin syndrome, abnormal bleeding, hyponatremia, seizure risk, mania/hypomania activation, elderly (fall risk, SIADH), poor CYP2C19 metabolizers, and drug interactions (MAOIs, serotonergic drugs, QT-prolonging agents). **Contraindications:** Contraindicated with MAOIs and pimozide. Contraindicated in patients with known QT interval prolongation or with congenital long QT syndrome.	**Initial**: 10 mg/day Titrate ↑ depending on patient response and tolerability. **Usual:** 20 mg/day **Max**: 30 mg/day **Administration:** Tablets can be crushed or dispersed in 10-20 mL of water. **Hepatic:** Dose should be ↓ in mild to moderate impairment (Child-Pugh A or B), with a maximum recommended dose of 20 mg/day; use with caution in severe impairment (Child-Pugh C) due to prolonged drug half-life. **Renal:** No dosage adjustment is required for mild to moderate impairment, but caution is advised in severe impairment (CrCl <30 mL/min) due to lack of data.	Brand: $77-101 Generic: $17-28 ODB: ✓ (except 10mg) NIHB: ✓

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Alzheimer's disease and related dementias ***Cholinesterase inhibitors can be beneficial in the early stages of dementia by addressing anxiety and behavioural symptoms, as cognitive impairment often presents as changes in behaviour. Since dementia exists on a spectrum, early use may support engagement and mitigate BPSD before symptoms escalate, especially in Lewy body dementia.***				
Cholinesterase inhibitors				
Donepezil (Aricept®) 5 mg, 10 mg tablets	Health Canada indication for symptomatic treatment of patients with mild, moderate and severe dementia of the Alzheimer's type. Unlikely to have clinically significant changes to agitation in AD. Half-life: 70h	**Side effects:** **CNS:** insomnia, fatigue, dizziness (mild to moderate AD), aggression (severe AD) **GI:** nausea, vomiting, diarrhea **Other:** muscle cramps, weight loss **Warnings:** Caution in age ≥ 85, low body weight, ↑ seizure risk, may worsen asthma/COPD, may cause bradycardia, ↑ gastric ulcer risk, bladder outflow obstruction, rhabdomyolysis. **Contraindications:** Contraindicated in patients with history of QT prolongation and/or torsade de pointes, including congenital long QT syndromes, history of cardiac arrhythmias.	**Initial:** 5 mg, once daily (AM or PM). Dose should be maintained for 4-6 weeks before considering a dose increase. **Usual:** 5-10 mg, once daily (AM or PM) Based on clinical judgement, the 10 mg daily dose may be considered following 4-6 weeks of treatment at 5 mg/day. **Max:** 10 mg, once daily (AM or PM) In older adult women of low body weight, daily dose should not exceed 5 mg. **Administration:** Tablets can be crushed or dispersed in 10-20 mL of water. **Hepatic:** Dose ↑ should be individualized in mild to moderate hepatic impairment due to potential increased drug exposure, but there is no data for severe hepatic impairment. **Renal:** No dose adjustment is required for renal impairment.	Brand: $184 Generic: $28 ODB: ✓ (LU 347, 348) NIHB: ✓ (LU)

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Rivastigmine (Exelon®) 1.5 mg, 3 mg, 4.5 mg, 6 mg capsules (Exelon® Oral Solution) 2 mg/mL oral solution (Exelon® Patch 5, 10, 15) 4.6 mg/24hr, 9.5 mg/24hr, 13.3 mg/24hr transdermal patch Patches and oral form are not interchangeable on a 1:1 basis due to differences in drug absorption and bioavailability.	Health Canada indication for symptomatic treatment of mild to moderate dementia of the Alzheimer's type. Unlikely to have clinically significant changes to agitation in AD. Best evidence in class for delusions and hallucinations. Half-life: Cap/Solution: 1-2h Patch: 3.4h (after patch removal)	**Side effects:** **CNS:** dizziness, tremor, anorexia **GI:** nausea, vomiting, diarrhea **Other:** abdominal pain, weight loss of >7% of baseline weight **Warnings:** Caution in low body weight, ↑ seizure risk, may worsen EPS symptoms and asthma/COPD, may cause bradycardia, QT-prolongation, syncope, ↑ gastric ulcer risk, bladder outflow obstruction. **Contraindications:** Contraindicated in patients with history of QT prolongation and/or torsade de pointes, including congenital long QT syndromes, history of cardiac arrhythmias.	**Initial:** 1.5 mg BID (3 mg/day) If initial dose is well tolerated, dosage may be increased to 3 mg BID (6 mg/day) after a minimum of 2 weeks. **Usual:** 6-12 mg/day Dose increases above 6 mg/day should proceed cautiously. Increases to 4.5 mg BID (9 mg/day) and then 6 mg BID (12 mg/day) should also be based on good tolerability of the current dose and should only be considered after a minimum of 2 weeks at a dose level. **Max:** 6 mg BID (12 mg/day) **Administration:** Capsules can be opened and sprinkled; bad taste. **Switch from Oral to Patch:** < 3 mg BID (6 mg/day) → Exelon® Patch 5 3-6 mg BID (6-12 mg/day) → Exelon® Patch 10 Apply the first patch on the day following the last oral dose. Patients >85 years old with low body weight or serious comorbid disease should start treatment at less frequent dosing (1.5 mg/day) and increase at a slower rate. **Hepatic**: Contraindicated in severe hepatic impairment. Dose escalation in mild to moderate impairment should proceed with caution due to potential increased adverse effects. **Renal:** Limited data available in renally impaired patients. Dose escalation should be done cautiously with close monitoring for adverse effects.	Brand: Cap: $223 Solution: $100-362 Patch: $193-200 Generic: Cap: $56 Solution: N/A Patch: $144 (except Patch 15) ODB: ✓ (LU 347, 348) (except solution and patch) NIHB: ✓ (LU) (except solution and patch)

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
Galantamine (Reminyl ER™) 8, 16, 24 mg extended-release (ER) capsules	Health Canada indication for symptomatic treatment of mild to moderate dementia of the Alzheimer's type. Unlikely to have clinically significant changes to agitation in AD. Half-life: 7-9.7h	**Side effects:** **CNS:** Dizziness, syncope, anorexia **GI:** Nausea, vomiting **Warnings:** Caution in low body weight, ↑ seizure risk, may worsen EPS symptoms and asthma/COPD, may cause bradycardia and AV block, QT-prolongation, syncope, ↑ gastric ulcer risk, bladder outflow obstruction.	**Initial:** 4 mg BID (8mg/day), preferably with meals) for 4 weeks. Dosage should be ↑ to initial maintenance dose of 8 mg BID (16 mg/day) after 4 weeks. **Usual:** 8-12 mg BID (16-24 mg/day) If the initial maintenance dose is well tolerated, a further ↑ to 12 mg BID (24 mg/day) may be considered only after a minimum of 4 weeks at 8 mg BID (16 mg/day). **Max:** 12 mg BID (24 mg/day) Dosage escalation for patients >85 years old with low body weight should be undertaken with caution. **Administration:** Capsules can be opened and sprinkled. **Hepatic:** Dose ↑ should be done cautiously in mild to moderate impairment (Child-Pugh A or B) with a reduced initial dose of 8 mg every other day, ↑ gradually; contraindicated in severe hepatic impairment (Child-Pugh C) due to increased drug exposure. **Renal:** Dose escalation should proceed cautiously in patients with moderate impairment (CrCl 9-60 mL/min), with a maximum recommended dose of 16 mg/day; contraindicated in severe renal impairment (CrCl <9 mL/min) due to lack of data.	Brand: D/C Generic: $54 ODB: ✓ (LU 347, 348) NIHB: ✓ (LU)

Medication	Considerations	Adverse reactions, warnings, and contraindications	Dosing	Cost and coverage (1-month)
N-methyl-D-aspartate (NMDA) receptor antagonist				
Memantine (Ebixa®) 5 mg, 10 mg tablet	Health Canada indication for symptomatic treatment of moderate to severe dementia of the Alzheimer's type. Half-life: 60-80h	**Side effects:** **CNS:** dizziness, headache, anxiety, confusion, hallucinations, somnolence **GI:** constipation, diarrhea, nausea, vomiting **CV:** hypertension **Other:** pain, back pain, coughing **Warnings:** ↑ seizure risk, may increase hypertension, bradycardia, and cardiac failure, may worsen corneal conditions, urine alkalization may lead to drug accumulation, avoid NMDA antagonist interactions (amantadine, ketamine, dextromethorphan).	**Initial:** 5 mg/day (AM) The dose should then be increased by 5 mg to 10 mg/day (5 mg BID), 15 mg/day (10 mg AM and 5 mg PM as separate doses), and 20 mg/day (10 mg BID), depending on patient response and tolerability. The recommended interval between dose increases is one week. **Usual:** 20 mg/day **Max:** 20 mg/day **Administration:** Tablets can be crushed or dispersed in 10-20 mL of water. **Hepatic:** Mild to moderate impairment (Child-Pugh A or B): No dosage adjustment required. Severe impairment (Child-Pugh C): Not recommended due to lack of data and potential for ↑ drug exposure. **Renal:** Mild impairment (CrCl 50-80 mL/min): No dosage adjustment required. Moderate impairment (CrCl 30-49 mL/min): Start at 10 mg/day, may ↑ to 20 mg/day if well tolerated. Severe impairment (CrCl 15-29 mL/min): Maximum dose is 10 mg/day due to ↓ clearance.	Brand: D/C Generic: $67-80 ODB: X NIHB: X

Mild BPSD: Symptoms cause little to no disruption or distress to the person living with dementia and are typically intermittent and responsive to psychosocial interventions.
Moderate BPSD: Symptoms cause some disruption or moderate distress to the person living with dementia and are less responsive to psychosocial interventions.
Severe BPSD: Symptoms cause significant distress to the person living with dementia, severe and frequent disruption, or risk of harm (self or others), and are minimally responsive to psychosocial strategies alone.

Legend
AD = Alzheimer's disease; **AM** = morning; **BID** = twice a day; **BP** = Blood Pressure; **CNS** = Central Nervous System; **CR** = Complete response; **CrCl** = Creatinine Clearance; **CV** = Cardiovascular; **D/C** = Discontinued; **DRESS** = Drug reaction with eosinophilia and systemic symptoms; **EPS** = Extrapyramidal symptoms (e.g., dystonia, akathisia, parkinsonism, tardive dyskinesia); **GERD** = Gastroesophageal Reflux Disease; **GI** = Gastrointestinal; **HR** = Heart Rate; **IM** = Intramuscular; **IR**= Immediate-release; **LFT** = Liver function test; **MAOI** = Monoamine oxidase inhibitor; **N/A** = Not Applicable; **NMDA** = N-methyl-D-aspartate receptor; **NMS** = Neuroleptic malignant syndrome; **ODT** = Orally disintegrating tablets; **PO** = by mouth; **PM** = evening; **SIADH** = Syndrome of Inappropriate Antidiuretic Hormone Secretion; **SJS** = Stevens-Johnson Syndrome; **SL**= sublingual; **TEN** = Toxic Epidermal Necrolysis; **XR** = Extended-release

Cost: an approximate range for a 1-month supply using the initial and max dose (includes a markup of 10% and a dispensing fee of $12.99)
Half-life: The time required for a medication's plasma concentration to decrease by 50%; achieving 3–5 half-lives is typically necessary to ensure effective elimination from the body.
Titration: Dose escalations can be completed at a slower pace than outlined above, based on clinician discretion.
ADR/Warnings/Contraindications: The side effects and contraindications listed represent the most clinically relevant or common adverse effects and are not intended to be exhaustive.