

Medications and Reducing Risk of Falls

Falls are responsible for about 85% of injury-related hospitalizations in Canadian older adults. About 17% of hospitalizations for falls in older adults are due to falls in residential institutions, and 80% of fall-related hospitalizations end in death.¹

According to the ISMP*, the top medications associated with falls are opioids (25%), psychotropics (21%), cardiac medications (17%), and hypoglycemics (14%).² The table below summarizes how certain types of medications may increase the risk of falls in some residents.**

TYPE OF MEDICATION	EXAMPLES	SIDE EFFECTS THAT CAN INCREASE RISK OF FALLS
Opioids	Codeine (Tylenol® #3), morphine (M-Eslon®, MS Contin®), HYDROmorphone (Hydromorph Contin®, Dilaudid®), fentanyl patch	<ul style="list-style-type: none"> • Drowsiness • Dizziness • Confusion
Psychotropic medications (antipsychotics, antidepressants, sedative-hypnotic drugs)	<p>Antipsychotics (e.g., risperidone [Risperdal Consta®], olanzapine [Zyprexa®], quetiapine [Seroquel®])</p> <p>Antidepressants (e.g., amitriptyline [Elavil®], fluoxetine [Prozac®], citalopram [Celexa®], escitalopram [Cipraxel®], trazodone)</p> <p>Sedative-hypnotic drugs</p> <p>Benzodiazepines (e.g., diazepam [Valium®], lorazepam [Ativan®]), Z-drugs (zopiclone [Imovane®], zolpidem [Sublinox®])</p>	<ul style="list-style-type: none"> • Drowsiness, dizziness • Sleep disturbances • Visual impairment (anticholinergic effect – blurred vision) • Balance impairment and orthostatic hypotension (low blood pressure on standing or getting up) • Extrapyrimal symptoms
Cardiovascular drugs	<p>ACE inhibitors (e.g., enalapril [Vasotec®], ramipril [Altace®])</p> <p>Angiotensin receptor blockers (ARBs) (e.g., candesartan [Atacand®], valsartan [Diovan®])</p> <p>Beta-blockers (e.g., metoprolol [Lopresor®], atenolol [Tenormin®])</p> <p>Calcium channel blockers (e.g., diltiazem [Tiazac®], amlodipine [Norvasc®])</p> <p>Digoxin</p> <p>Diuretics (e.g., furosemide [Lasix®], hydrochlorothiazide)</p>	<ul style="list-style-type: none"> • Orthostatic hypotension • Dizziness, light-headedness • Incontinence (diuretics) • Dehydration (diuretics) • Syncope
Antihyperglycemic drugs	Sulfonylureas (e.g., glyburide), metformin (Glucophage®), insulin	<ul style="list-style-type: none"> • Hypoglycemia
Anticonvulsants (seizure medications)	Carbamazepine (Tegretol®), phenytoin (Dilantin®), gabapentin (Neurontin®)	<ul style="list-style-type: none"> • Sedation • Dizziness • Ataxia
Antiparkinsonian medications	Levodopa/carbidopa (Sinemet®), dopamine agonists (e.g., ropinirole, pramipexole [Mirapex®])	<ul style="list-style-type: none"> • Orthostatic hypotension

Reference for table: 3

*ISMP = Institute for Safe Medication Practices. **This list is not comprehensive and only provides examples of most commonly used medications that may increase the risk of falls.

References:

1. Accreditation Canada/CIHI/CPSI. Preventing falls: from evidence to improvement in Canadian health care. 2014. https://www.patientsafetyinstitute.ca/en/toolsResources/Documents/Interventions/Reducing%20Falls%20and%20Injury%20from%20Falls/FallsJointReport_2014_EN.pdf. Accessed July 29, 2020.
2. ISMP Canada. Medication incidents that increase the risk of falls: a multi-incident analysis. 2015. https://www.ismp-canada.org/download/safetyBulletins/2015/ISMPCSB2015-12_Falls.pdf. Accessed July 29, 2020.
3. Dyks D, Sadowski C. Interventions to reduce medication-related falls. Can Geriatrics Soc J CME 2015;5(1):24-32.