Scope
This guideline addresses the identification and management of older adults aged ≥ 65 years living in the community with risk factors for falls. The guideline facilitates individualized assessment and provides a framework and tools to manage risk factors for falls and prevent fall-related injuries. The main focus of the guideline is the community-based primary care setting, although it may be useful in other care contexts. Hospital and facility-based care settings are outside the scope of this guideline.

Key Recommendations
• Annually, or with a significant change in clinical status, ask patients ≥ 65 years about:
  o their falls;
  o frequency of falling; and
  o difficulties in gait or balance.
• Simple one-minute screening tools can identify people at risk of falls:
  o Three question approach and/or
  o Staying Independent checklist
• For those evaluated as “at risk”, a multifactorial risk assessment is recommended over multiple visits (see Multifactorial Risk Assessment, Fall History and Intervention section).
• Based on the multifactorial risk assessment, falls prevention may require more than one visit:
  o Recommend exercise to improve strength and balance and safe mobility (this is the most effective single intervention on a population basis): SAIL (Strategies and Actions for Independent Living); SAIL-FN (Strategies and Actions for Independent Living for First Nations); Osteofit; SteadyFeet, an Otago-based program class and Tai Chi.
  o A medication review
  o Vision assessment
  o Osteoporosis risk assessment and management
  o Medical aspects identified through multifactorial assessment
  o A team-based approach (see Referral Options section)
  o Recommend an assessment of the home environment
  o Other interventions may be more appropriate in specific conditions
• After a fall, interdisciplinary assessment and care planning can reduce the risk of future falls.

Definition
Fall: A fall is defined as coming to rest inadvertently on the ground or floor or other lower level, not due to an acute overwhelming event (e.g., stroke, seizure, syncope) or external event to which any person would be susceptible.1–4

Severe fall: A fall resulting in injuries requiring presentation to the emergency department and/or, hospitalization and/or death.5

Recurrent faller: A person who has fallen two or more times in the past 12 months.6,7
Epidemiology

Incidence of Falls and Fall-Related Injuries Among British Columbians Aged ≥ 65 Years

- 1 in 3 fall annually in the community setting.8
- 1 hospitalization every 30 minutes, with 83% from community and 17% from facility-based care.9
- Every day ~3 older adults die from a fall. ~1,000 direct and indirect deaths annually.9
- Forecasted to continue increasing with population aging.10 There was a 33% increase in hospitalizations from 2009-2016.9

Burden of Falls and Fall-Related Injuries Among British Columbians Aged ≥ 65 Years

- Annual total cost (including emergency room visits, hospitalized treatment, permanent disability, and cost of deaths) is $1.4 billion.11,12 Annual total cost does not include societal costs, such as the cost of reduced quality of life, reduced productivity for older adults (e.g., informal caregiving, volunteering, and employment) and reduced productivity for family caregivers.
- 10 - 15% of falls result in serious injuries including fractures and head injuries.13
- Falls are the cause of 40% of admissions to facility-based care.14
- Falls are the cause of 95% of hip fractures:9
  - 30% die within the following year9, this reflects their increasing frail status15
  - 50% lose mobility and independence9

Prevention of Falls and Fall-Related Injuries Among Older Adults Aged ≥ 65 years

- Falls are predictable and preventable (see the Associated Document: Facts About Falls).
- Older adults are unlikely to initiate a conversation about fall risk, even if they have sustained injuries from falls in the past.
- Older adults under recognize their fall risk and under report falls. They have low awareness that most falls are preventable and are not a normal part of aging.
  - **Clinical assessment by a healthcare provider and multifactorial interventions to address predisposing factors can decrease falls by approximately 25% among those at high risk.**16,17
- Screening and interventions to reduce falls in community-dwelling older adults at the primary care level is cost effective (estimated at $35,213 per Quality Adjusted Life Years).18

Risk Factors

Falling is an indicator of a complex system failure requiring multifactorial assessment and intervention.15 These can be categorized into four dimensions: biological, behavioural, environmental and socioeconomic factors (Table 1). Medical conditions that cause gait and balance problems are reviewed in Table 2.15,20

- Frailty and multi-morbidity, not increasing age, is the primary consideration in fall risk. For those ≥ 80 years, 60% fell over a 12-month period, reflecting their frail status.21–23
- Fear of falling results in self-imposed activity restrictions and further functional decline, depression, feelings of helplessness, and social isolation.24 This fear in turn increases risk of falling.
- Older adults often misattribute a fall to “bad luck” or an environmental hazard. In reality, “tripping” reflects an inability to compensate and prevent the fall from occuring.25–27
- Less than half who fell recently will disclose falling to their healthcare providers.28,29 Admitting falls may carry its own stigma around weakness or frailty and can be met with embarrassment, fear, or avoidance.
- Older adults have low awareness of the multifactorial interventions that prevent falls.30
### Table 1: Risk Factors Associated with Falls and Fall-Related Injury\textsuperscript{20,24,31–42}

<table>
<thead>
<tr>
<th>Major risk factors that have the strongest associations for prediction of falls</th>
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</thead>
<tbody>
<tr>
<td>• Overarching Factor: History of falls</td>
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<tr>
<td>• Advanced age</td>
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<tr>
<td>• Visual impairments</td>
</tr>
<tr>
<td>• Urinary incontinence</td>
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<tr>
<td>• Medication (psychotropics, antipsychotics, sedative/hypnotics, antidepressants, see Appendix B)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional risk factors associated with falls and fall related injury</th>
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<tbody>
<tr>
<td><strong>Medical/Biological/Intrinsic Factors</strong></td>
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<tr>
<td>• Frailty</td>
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<thead>
<tr>
<th><strong>Functional Changes</strong></th>
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<tbody>
<tr>
<td>• Impaired mobility</td>
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<tr>
<td>• Balance deficit</td>
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</table>

<table>
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<tr>
<th><strong>Behavioural Factors</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Fear of falling</td>
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<tr>
<td>• Communication (e.g. language barriers, aphasia, literacy level)</td>
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<tr>
<td>• Risk-taking behaviours</td>
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<tr>
<td>• Impaired safety awareness, impulsivity</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Socioeconomic Factors</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lower level of education</td>
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<tr>
<td>• Poor living conditions</td>
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<tr>
<td>• Living alone</td>
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<table>
<thead>
<tr>
<th><strong>Environmental Factors</strong></th>
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<tbody>
<tr>
<td>• Stairs</td>
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<tr>
<td>• Home hazards (clutter, see Associated Document: Checklist for Preventing Falls at Home)</td>
</tr>
<tr>
<td>• Inadequate lighting</td>
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<tr>
<td>• Inadequate visual contrast with a change in surface of level</td>
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</tbody>
</table>

| • Medical and/or psychiatric comorbidity |
| • Lower body weakness |
| • Difficulties with gait and balance |
| • Functional decline: limitations in any activities of daily living (ADLs) or instrumental activities of daily living (IADLs) |
| • Pain and stiffness from arthritis |
| • Depression |

| • Refer to Table 2 below for medical conditions that cause gait and balance problems |
| • Functional decline: Limitations in any ADLs or IADLs |
| • Urinary and/or bowel incontinence/urgency |

| • Lack of exercise |
| • Inappropriate footwear/clothing |
| • Misuse of assistive devices, inappropriate devices |
| • Poor nutrition |
| • Dehydration/inadequate fluid intake |

| • Lack of support networks/social interaction |
| • Inadequate support to caregiver for dependant elderly\textsuperscript{43–45} |
| • Lack of transportation |

| • Seasonal weather hazards (e.g. rain, ice, snow, see Associated Document: Falls in Winter) |
| • Poor building design and/or maintenance. |
| • Lack of: handrails, curb ramps, rest areas, grab bars |
| • Obstacles/tripping and slipping hazards: pets, cords, rugs, furniture |
Table 2: Medical Conditions Associated with Gait and Balance Disorders\(^{42}\)

<table>
<thead>
<tr>
<th>Cardiovascular Diseases</th>
<th>Sensory Abnormalities</th>
<th>Metabolic Diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Arrhythmias</td>
<td>• Hearing impairment</td>
<td>• Diabetes mellitus</td>
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<tr>
<td>• Postural hypotension</td>
<td>• Peripheral neuropathy</td>
<td>• Hepatic encephalopathy</td>
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<tr>
<td>• Aortic stenosis</td>
<td>• Visual impairment</td>
<td>• Hyper- and hypothyroidism</td>
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<tr>
<td>• Congestive heart failure</td>
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<td>• Obesity</td>
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<tr>
<td>• Coronary artery disease</td>
<td></td>
<td>• Uremia</td>
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<tr>
<td>• Peripheral arterial disease</td>
<td></td>
<td>• Vitamin B(_{12}) deficiency</td>
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<tr>
<td>• Thromboembolic disease</td>
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<tr>
<td>Neurological Disorders</td>
<td><strong>Musculoskeletal Disorders</strong></td>
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<tr>
<td>• Cerebellar dysfunction or degeneration</td>
<td>• Cervical spondylosis</td>
<td></td>
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<tr>
<td>• Delirium</td>
<td>• Gout</td>
<td></td>
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<tr>
<td>• Cognitive impairment/Dementia</td>
<td>• Lumbar spinal stenosis</td>
<td></td>
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<tr>
<td>• Multiple sclerosis</td>
<td>• Muscle weakness or atrophy</td>
<td></td>
</tr>
<tr>
<td>• Myelopathy</td>
<td>• Arthritis (pain and stiffness)</td>
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<tr>
<td>• Normal-pressure hydrocephalus</td>
<td>• Osteoporosis complications</td>
<td></td>
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<tr>
<td>• Parkinson’s disease</td>
<td>• Podiatric conditions</td>
<td></td>
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<tr>
<td>• Stroke</td>
<td>• Leg length discrepancy</td>
<td></td>
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<tr>
<td>• Vertebrobasilar insufficiency</td>
<td></td>
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<tr>
<td>• Vestibular disorders</td>
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<tr>
<td>Infections</td>
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<tr>
<td>• Acute infection</td>
<td></td>
<td></td>
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<tr>
<td>• Tertiary syphilis</td>
<td></td>
<td></td>
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<tr>
<td>• Human immunodeficiency virus associated neuropathy</td>
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Evaluating Patients for Fall Risk (Annually)

- Health care providers can help older patients reduce falls by conducting a fall risk assessment and applying proven strategies that are team based.
- Annually ask patients ≥ 65 years about (see Figure 1)\(^{46,47}\):
  - their falls;
  - frequency of falling; and
  - difficulties in gait or balance.
- Reassess for fall risk if there is a significant change in the patient’s health: physical, cognitive, mental status, behavioural, mobility, medication changes, social network or environment.\(^{48-50}\)

One of two evaluation tools can be used to assess patient fall risk:

1. **Primary care practitioner asks 3 questions (could be done in one minute):**
   - Ask the following questions, as needed:
     1. Have you fallen in the past year? If so:
        - How many times?
        - Were you injured?
     2. Do you ever feel unsteady when you stand or walk?
     3. Do you worry about falling?

If the patient answers “yes” to any of the three questions above, carry out a multifactorial risk assessment and fall history.
2. **Staying Independent Checklist (can be done in the waiting room):**
   - Ask the patient or their caregiver to complete the *Staying Independent Checklist* to identify major fall risk factors (see the [Associated Document: Staying Independent Checklist](#)).
   - The *Staying Independent Checklist* can be made available in the office as a handout and distributed by other healthcare providers (e.g., nurse or medical office assistant (MOA)).

**Figure 1. Recommended evaluation steps for fall risk stratification**

**Patient Evaluated as at Risk: Multifactorial Risk Assessment, Fall History and Intervention**

**Falls History and Assessment of Modifiable Risk Factors**
- For patients with multiple health concerns, consider using “rolling” assessments over multiple visits, targeting at least one area of concern at each visit.

**Interventions are recommended for patients based on their individualized multifactorial risk assessment (see list below).**
- The most effective fall prevention intervention on its own is participation in an exercise program designed to improve strength and balance. See [Exercise Programs](#) in the [Referral Options](#) section below.
- All other interventions are effective when completed in combination.
- Falls prevention quality improvement strategies proven to reduce falls include: education and reminders for patients and team changes, case management and staff education for clinicians.
**Categories of Assessment and Intervention for Patients Evaluated At Fall and Injury Risk**. See also the BC Guideline: Frailty in Older Adults – Early Identification and Management

<table>
<thead>
<tr>
<th>History</th>
<th>Physical exam</th>
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</thead>
<tbody>
<tr>
<td>1. Fall history</td>
<td>Functional review</td>
</tr>
<tr>
<td>2. Physical activity and endurance</td>
<td>12. Mobility</td>
</tr>
<tr>
<td>3. Limitations in activities of daily living (ADLs)</td>
<td>13. Footwear</td>
</tr>
<tr>
<td>4. Use of adaptive equipment</td>
<td>Medical review</td>
</tr>
<tr>
<td>8. Continence</td>
<td>17. Other system examination</td>
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<tr>
<td>9. Vitamin D intake</td>
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</tbody>
</table>

**Social and environmental review**

10. Lifestyle

11. Environmental and home hazards

### History

1. **Fall history** (see Appendix A: SPLATT Tool)
   - Circumstances of the fall(s) (e.g., what the patient was doing at the time of a fall and belief as to the cause)
   - Associated symptoms preceding and after the fall (e.g. palpitations, syncope, nausea)
   - Frequency
   - Details of any fall-related physical and/or psychological injuries
   - Severity and duration of any changes in ADLs/mobility status and in client's confidence walking/fear of falling
   - Post-fall interventions

### Functional review

2. **Physical activity and endurance (e.g. how far they can walk)**
   - Assess patient fitness for physical activity (fall risk, injury risk, cardiac risk, etc.).
   - Activity level/endurance and strength
   - Exercise program including strength and balance exercises
   - Fatigue and energy level
   - **Intervention:** refer to an Exercise Program within the community or at home that focuses on balance and strength and includes appropriate increases in intensity
     - In BC, this includes programs like SAIL (Strategies and Actions for Independent Living); SAIL-FN (Strategies and Actions for Independent Living for First Nations); Osteofit; SteadyFeet, an Otago-based program class and Tai Chi.
     - Note that if pain and balance issues are a barrier for exercise, the patient should be referred to a physiotherapist, not a group exercise program

3. **Identify limitations in ADLs** (bathing, dressing, toileting, transfers, feeding, meal access, cleaning, shopping, medication compliance, banking, transportation, telephone access)
   - **Intervention:** Consider referral for occupational therapy, home care support, social work, etc. available through Home and Community Care at local health authorities
   - Review safe transportation, driving skills as appropriate
4. **Access and use of adaptive equipment**
   - Evaluate if and how the patient uses adaptive equipment and/or mobility aids
   - **Intervention:** See the Associated Document: Assessing Canes

**Medical review**

5. **Co-morbidities and risk factors:** see Table 2 for a list of medical conditions that cause gait and balance problems
   - See the Frailty in Older Adults – Early Identification and Management guideline for further areas of geriatric assessment.
   - **Intervention:** Optimize treatment of comorbidities identified. Some comorbidities have associated guidelines at BCGuidelines.ca:
     - Major Depressive Disorder in Adults
     - Osteoporosis
     - Stroke and Transient Ischemic Attack
     - Diabetes Care
     - Cardiovascular Disease
     - Hypertension
     - Cognitive Impairment

6. **Medication review**
   - See Appendix B: Medications and Risk of Falling for a list of medications that increase risk of falling or serious outcomes if a fall incident occurs
   - For information and resources on conducting a medication review, see Appendix C Medication Review, Beers Criteria or deprescribing.org
   - Request a medication review by a trained pharmacist which are covered by BC Pharmacare for eligible patients
   - **Intervention:** Consider withdrawing or minimizing use of psychoactive medication(s), cardiovascular medication(s), sedative(s) or medication(s) with anti-cholinergic side effects.
     - Educate patients on increased risk of hemorrhage with anticoagulant and antiplatelet use. Advise to watch for new symptoms if they fall. Anticoagulants and antiplatelets (e.g. warfarin, NOACs, ASA and other antiplatelet agents) increase the risk of bleeding from an injury from a fall, however, may still be indicated based on individualized risk assessment. A detailed discussion of anticoagulants for the person at risk is beyond the scope of this guideline and individualized discussion with the patient is warranted. For more information, see the associated BC Guidelines: Use of NOAC in Non-Valvular Atrial Fibrillation and Warfarin Therapy Management.
     - Certain drugs (proton pump inhibitors (PPI), corticosteroids, etc.) may increase the risk of fracture during a fall and review of PPI use is warranted. For more information, see the associated BC Guideline: Osteoporosis: Diagnosis, Treatment and Fracture Prevention.

7. **Nutrition and hydration**
   - Assess volume loss (e.g., diarrhea, vomiting, fluid restriction), diet/appetite, weight loss, dentition, swallowing, obesity.
   - **Intervention:** Direct patient to dietitian services offered through HealthLinkBC.ca or 8-1-1 or local health unit or hospital outpatient services.
   - Consider nutrition supplement
   - A protein intake of between 1.2 and 1.5 g/kg/day is recommended

8. **Continence**
   - Assess urinary and bowel continence
   - **Intervention:** Review medications that may contribute to bowel/bladder problems (e.g. calcium, narcotics, CCBs, TCA, etc.)
   - Consider adding a bowel protocol
   - Consider referral to a Nurse Continence Advisor, where available
9. **Vitamin D intake**
   - Ask about Vitamin D supplementation
   - **Intervention:** Vitamin D is recommended in northern hemispheres, with aging skin and to promote muscle strength. It is not effective for fall and fracture prevention.
   - For specific recommendations on Vitamin D and for patients at risk of osteoporosis, see the associated guidelines at [BCGuidelines.ca: Vitamin D Testing](https://www.bcguidelines.ca) and [Osteoporosis](https://www.bcguidelines.ca).

**Social and environmental review**

10. **Lifestyle**
   - Review of substance use, including alcohol, cannabis use and illicit drug use
   - **Intervention:** For further information on alcohol consumption, see the BC Guideline: Problem Drinking or the [Canadian Low Risk Drinking Guidelines](https://www.canadian-lrdr.org).

11. **Environmental and home hazards**
   - Ask about potential home hazards (stairs, lack of handrails or grab bars, poor lighting, slippery or uneven surfaces (throw rugs, tub floor), obstacles and tripping hazards)
   - Consider seasonal hazards
   - **Intervention:** Discuss environmental changes that can improve home safety
   - Refer to an occupational therapist for a home assessment and environmental modification
   - Consider directing patient to access help at home through BetteratHome.ca
   - For further information on environmental hazards see [Associated Document: Checklist of Preventing Falls at Home](https://betterathome.ca) and [Associated Document: Falls in Winter](https://betterathome.ca)

**Physical exam**

**Functional review**

12. **Mobility**
   - Evaluate gait, strength and balance
   - One or more of the following short standardized tests is recommended to assess balance and gait:
     - Timed Up and Go Test (recommended) - see [Associated Document: Timed Up and Go Test](https://www.bcguidelines.ca) for instructions. The Timed Up and Go test assesses gait, balance, coordination, and strength; does not require specialized training; and can be administered in about 5 minutes.
     - 30 Second Chair Stand Test (optional) - see [Associated Document: Chair Stand Test](https://www.bcguidelines.ca) for instructions. The 30 Second Chair Stand Test, also known as the “30 Second Sit to Stand Test”, assesses lower extremity strength, and is quick and easy to administer in the clinical setting.
     - Four Stage Balance Test (optional) - see [Associated Document: Four Stage Balance Test](https://www.bcguidelines.ca) for instructions. The Four Stage Balance Test assesses static balance and is quick and easy to administer in the clinical setting.
   - **Intervention:** Refer individuals with a gait and balance impairment to a physiotherapist for balance and gait training.
   - Manage and/or refer any medical causes of impaired gait. See Table 2 Medical Conditions Associated with Gait and Balance Disorders
   - Encourage use of an alert device to provide support
     - Consider other technology in the home: Philips Lifeline, SafeTracks GPS Canada, SafeGuard Medical Alert, Telus LivingWell Companion, Apple Watch Series 4 or 5 (has a falls sensor to detect falls, which will automatically call for help if set up and linked to a phone)
   - Equipment may be recommended by physiotherapy and occupational health with correct fit
13. Footwear
- For further information on the assessment of footwear see Associated Document: Footwear checklist
- **Intervention**: Provide education on shoe fit, traction, insoles, and heel height or refer to a pedorthist.

14. Feet
- Ankle flexibility, plantar tactile sensitivity, toe plantar/flexor strength, moderate to severe bunion, toe deformity, ulcer, and/or deformed toe nail have all been associated with falls.
- **Intervention**: Treat identified foot problems or refer to a podiatrist and/or pedorthist and/or orthopedics specialist.

15. Visual acuity
- Common assessment tool (Snellen eye test)
- Encourage annual eye examinations
- Assess for use of multifocal lenses (multifocal lenses are not recommended)
- **Intervention**: Refer to an ophthalmologist or optometrist for vision assessment and correction
  - For those with cataracts, expedited surgery on the first affected eye is shown to significantly reduce fall risk. See BCGuidelines.ca: Cataract – Treatment in Adults
  - Patients wearing multifocal glasses may have added risk for falls due to impaired distance contrast sensitivity and depth perception in the lower near-vision portion of the lenses, thereby reducing the ability to detect environmental hazards
- Stop, switch, or reduce the dose of medication affecting vision (e.g., anticholinergics).

16. Orthostatic (or postural) blood pressure
- For best results, measure blood pressure and pulse rate after patient has been lying for 5 minutes and again after patient standing for 1 and 3 minutes.
  - A decrease in standing blood pressure of greater than 20mm Hg indicates an increased risk for falling when standing up.
- **Intervention**: Treat reversible causes, establish an appropriate blood pressure goal and stop, switch, or reduce the dose of medications that increase fall risk.
- Educate about importance of exercises (e.g., foot pumps).
- Advise patient on how to manage after a fall, see HealthLinkBC.ca: How to Get Up Safely After a Fall.
- Review need for adequate hydration.
- Consider compression stockings.

17. Other system examination
Evaluate patient for new diagnosis or diagnoses that may contribute to fall risk:
- Cognitive screen
- Depression screen
- Cardiovascular examination: orthostatic vitals, arrhythmia, murmurs and bruits
- Neurological examination: sensory, pyramidal, cerebellar, extrapyramidal, peripheral neuropathy, spinal stenosis, radiculopathy
- Sensory examination
- Joint and muscle examination (including kyphosis)
- Leg length measurements
- Request investigations as clinically appropriate
Follow-Up

- For those evaluated at risk and with an intervention care plan, follow-up with patient in 30-90 days to discuss the care plan’s value and discuss ways to improve patient receptiveness to the care plan and address barrier(s).
- Older adults may struggle with changing their health behaviours to reduce fall/injury risk factors and frequent, brief follow-up discussions focused on barriers and facilitators are recommended. For suggested motivational interviewing responses see the “Talking about Fall Prevention with Your Patients” document from the US Centre for Disease Control.
- Older adults may also wish to promote fall prevention when talking to their family and friends.

Patient Evaluated as Not at Risk of Falls

- Consider the opportunity to discuss the following to reduce future risk:
  - Educate the patient on fall and injury prevention (see the patient brochure from the US CDC “What You Can Do to Prevent Falls”) and Associated Document: Facts About Falls.
  - If appropriate, refer to community strength and balance exercise or fall prevention program, including online. See the Exercise Programs section below. This is the single most effective fall prevention intervention.\textsuperscript{52–56}
  - Reassess annually, or if patient presents with a fall.

Referral Options

- See the Associated Document: Referral Options Resource Guide for Patients and Caregivers

Exercise Programs

- The most effective fall prevention intervention on its own is participation in an exercise program designed to improve strength and balance.\textsuperscript{52–56}
- Older adults can check with their community centre, physiotherapist or call HealthLink BC at 8-1-1 (or 7-1-1 for the deaf and hard of hearing) to speak with a qualified exercise professional regarding the exercise options available in their community.
- Often a requirement for joining a community based physical activity program is completion of the Physical Activity Readiness Questionnaire for Everyone (PARQ+).
- SAIL (Strategies and Actions for Independent Living) exercise videos are available online: findingbalancebc.ca/exercise/sail-home-activity-program/.

Best practice recommendations for Falls prevention Exercise:\textsuperscript{16,48,64}

General considerations:
- Should be tailored to the individual (i.e. pitched at the right level, taking falls history, functional ability and medical conditions into account).\textsuperscript{65}
- Should be delivered by specially trained instructors to ensure appropriate increases in intensity.
- Care should be taken to ensure it is carried out in a manner that does not increase the risk of falling.

Type of exercise:
- Exercise should provide progressive challenge to balance. Strength training and walking may be included in addition to balance training. High-risk individuals, however, should not be prescribed brisk walking programmes.\textsuperscript{66} Evidence informed exercise programs include, SAIL (Strategies and Actions for Independent Living); SAIL-FN (Strategies and Actions for Independent Living for First Nations); Osteofit; SteadyFeet, an Otago-based program class and Tai Chi.
- Other forms of exercise which may increase balance and strength, such as dance, yoga, Pilates, tennis, have many benefits but may be insufficient for falls prevention and a supplemental activity may be considered.\textsuperscript{54,56} However, adherence to exercise routines increases with levels of enjoyment; it is important to recommend...
physical activity on an individual basis centred on goals, current fitness level, and health status.²⁵

**Frequency and duration**
- Adults ≥ 65 years should accumulate at least 150 minutes of exercise per week in bouts of 10 minutes or more.⁶⁷

**Geriatric Medicine**

Geriatric Medicine (hospital, private office)/falls clinic or practitioner specializing in the care of the elderly

**RACE: Rapid Access to Consultative Expertise Program** – [www.raceconnect.ca](http://www.raceconnect.ca)

A telephone consultation line for select specialty services for physicians, nurse practitioners and medical residents.

**If the relevant specialty area is available through your local RACE line, please contact them first.** Contact your local RACE line for the list of available specialty areas. If your local RACE line does not cover the relevant specialty service or there is no local RACE line in your area, or to access Provincial Services, please contact the Vancouver/Providence RACE line.

- **Vancouver Coastal Health Region/Providence Health Care:** [www.raceconnect.ca](http://www.raceconnect.ca)  
  ☏️ 604-696-2131 (Vancouver) or 1-877-696-2131 (toll free) Available Monday to Friday, 8 am to 5 pm

- **Northern RACE:** ☏️ 1-877-605-7223 (toll free)

- **Kootenay Boundary RACE:** [www.divisionsbc.ca/kb/race](http://www.divisionsbc.ca/kb/race)  
  ☏️ 1-844-365-7223 (toll free)

- **For Fraser Valley RACE:** [www.raceapp.ca](http://www.raceapp.ca) (download at Apple and Android stores)

- **South Island RACE:** [www.raceapp.ca](http://www.raceapp.ca) (download at Apple and Android stores) or see [www.divisionsbc.ca/south-island/RACE](http://www.divisionsbc.ca/south-island/RACE)

**Home and Community Care**

Primary care practitioners play an essential role in identifying patients in need of increased supports and facilitating intake into the system of care support. Ensure patients and caregivers in need of support are referred to local health care and social services, which are available from both publicly subsidized and private pay providers.

- For help finding information on social and health resources in your local community, see BC211 at [www.bc211.ca](http://www.bc211.ca)

Case managed services available to eligible patients through Home and Community Care within local health authorities include:
- community nursing for acute, chronic, palliative or rehabilitative support;
- community occupational therapist, physiotherapist, dietician consultation as available and appropriate;
- adult day services for personal care, health care and social and recreational activities;
- home support for assistance with activities of daily living;
- caregiver respite/relief;
- assisted living and facility-based care; and/or
- end-of-life care services.

For more information, see [www2.gov.bc.ca: Home and Community Care](http://www2.gov.bc.ca) or contact your local health authority.

Consider directing caregivers to [www.FamilyCaregiversBC.ca](http://www.FamilyCaregiversBC.ca) and the BC Family Caregiver Support Line at 1-877-520-3267.

**Advance Care Planning**

- Falls commonly accompany severe frailty and advance care planning is advised.
- See [BCGuidelines.ca: Frailty in Older Adults – Early Identification and Management](http://www.bcguidelines.ca) and [Advance Care Planning: Resource Guide for Patients and Caregivers](http://www.advancecareplanning.ca) for further information on advance care planning.
Vision Correction – Ophthalmologist and Optometrist

- A referral is not required for an optometrist visit however some extended health plans do require one. See: bc.doctorsofoptometry.ca/find-a-doctor/
- According to the BC Optometrist fee schedule, the Medical Services Plan provides limited or partial coverage as a benefit for optometric services in adults (bc.doctorsofoptometry.ca/patients/msp/):
  - Adults aged 19–64: eye exams not covered by MSP unless medically required
  - Seniors aged 65+: one full eye examination annually
- A referral is required to see an ophthalmologist. See: www.bcseps.com/index.php?option=com_sobi2&Itemid=4

Pathways – PathwaysBC.ca
An online resource that allows GPs and nurse practitioners and their office staff to quickly access current and accurate referral information, including wait times and areas of expertise, for specialists and specialty clinics.

Diagnostic Codes

ICD-9 codes: E880-E88868
ICD-10 codes: W00-W019.969

Appendices

- Appendix A: SPLATT Tool
- Appendix B: Medications and Risk of Falling
- Appendix C: Medication Review

Associated Documents

- Patient handout: Facts about Falls
- Staying Independent Checklist
- Checklist for Preventing Falls at Home
- How to Get Up Safely After a Fall
- Assessing Canes
- Falls in Winter
- Footwear checklist
- Timed Up and Go Test
- 30 Second Chair Stand
- Four Stage Balance Test
- Referral Options Resource Guide for Patients and Caregivers

Resources

- BCGuidelines.ca - Frailty in Older Adults – Early Identification and Management
  - Resource Guide for Older Adults and Caregivers
- Chronic Disease Management and Complex Care Incentives: compensates GPs for the time and skill needed to work with patients with complex conditions or specific chronic diseases.
- Fall Prevention Resources in BC - www2.gov.bc.ca/gov/content/family-social-supports/seniors/health-safety/disease-and-injury-care-and-prevention/fall-prevention/resources-to-learn-more
- General Practice Services Committee – www.gpscbc.ca
• Healthlink BC – www.healthlinkbc.ca
  o Preventing Falls in Older Adults
  o Seniors’ Falls Can be Prevented

• Practice Support Program: offers focused, accredited training sessions for BC physicians to help them improve practice efficiency and support enhanced patient care.

• US Centre for Disease Control - www.cdc.gov/steadi/materials.html
  o Talking about Fall Prevention with Your Patients

References


13 BCGuidelines.ca: Falls: Prevention, Risk Assessment and Management for Community-Dwelling Older Adults (2020)
40. Consensus statement on the definition of orthostatic hypotension, pure autonomic failure, and multiple system atrophy | Neurology [Internet]. [cited 2020 Feb 21]. Available from: https://www.neurology.org/content/46/5/1470

BCGuidelines.ca: Falls: Prevention, Risk Assessment and Management for Community-Dwelling Older Adults (2020)
This draft guideline is based on scientific evidence current as of February 2020.

The draft guideline was developed by the Guidelines and Protocols Advisory Committee in collaboration with the BC Injury Research and Prevention Unit.

For more information about how BC Guidelines are developed, refer to the GPAC Handbook available at BCGuidelines.ca: GPAC Handbook.

THE GUIDELINES AND PROTOCOLS ADVISORY COMMITTEE

The principles of the Guidelines and Protocols Advisory Committee are to:

- encourage appropriate responses to common medical situations
- recommend actions that are sufficient and efficient, neither excessive nor deficient
- permit exceptions when justified by clinical circumstances

Contact Information:
Guidelines and Protocols Advisory Committee
PO Box 9642 STN PROV GOVT
Victoria, BC V8W 9P1
Email: hlth.guidelines@gov.bc.ca
Website: www.BCGuidelines.ca

Disclaimer
The Clinical Practice Guidelines (the guidelines) have been developed by the guidelines and Protocols Advisory Committee on behalf of the Medical Services Commission. The guidelines are intended to give an understanding of a clinical problem, and outline one or more preferred approaches to the investigation and management of the problem. The guidelines are not intended as a substitute for the advice or professional judgment of a health care professional, nor are they intended to be the only approach to the management of clinical problem. We cannot respond to patients or patient advocates requesting advice on issues related to medical conditions. If you need medical advice, please contact a health care professional.
## Appendix A: SPLATT Tool

<table>
<thead>
<tr>
<th>History</th>
<th>Fall 1</th>
<th>Fall 2</th>
<th>Fall 3</th>
</tr>
</thead>
</table>
| **S** Symptoms immediately prior to the fall  
- Light-headedness, dizziness, vertigo, palpitations, nausea, chest pain?  
- Any warning?  
- Do they remember tripping?  
- Do they remember hitting the floor?  
- Were they aware they were falling? | | | |
| **P** Previous falls history  
- Other falls in the past year?  
- Stumbles/near misses? | | | |
| **L** Location of fall  
- Outdoors: garden/street/shops/restaurant?  
- Indoors: stairs/kitchen/bedroom/bathroom? | | | |
| **A** Activity at time of fall  
- Walking, turning, going downstairs, carrying shopping, getting up from chair, crossing the road?  
- Use of any technology? | | | |
| **T** Time of fall  
- E.g. after a meal, first thing in morning  
- Length of time on ground - long lie?  
- Loss of consciousness?  
- Able to get up?  
- Do they have a method of calling for help/keeping warm? | | | |
| **T** Trauma or injury resulting from the fall  
- Bumps, bruises, skin flaps, facial injuries, fractures?  
- Fear of falling, loss of confidence? | | | |
### Appendix B: Medications and the Risk of Falling

Examples of drugs that can increase the risk of falling, or of a serious outcome if a fall occurs, and possible mechanisms. Falls are often caused by multiple factors. This list should be used in conjunction with other fall prevention strategies. A patient should not be denied beneficial or necessary drug therapy based on this list.

<table>
<thead>
<tr>
<th>Medication Type</th>
<th>Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACE Inhibitors (3)</strong></td>
<td>Benazepril, Captopril, Cilazapril, Enalapril, Fosinopril, Lisinopril, Perindopril, Quinapril, Ramipril, Trandolapril</td>
</tr>
<tr>
<td><strong>Alcohol (1,5)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Alpha Receptor Blockers (2, 3, 13 especially initial doses)</strong></td>
<td>Alfuzosin, Doxazosin, Prazosin, Silodosin, Tamsulosin, Terazosin</td>
</tr>
<tr>
<td><strong>Anticoagulants (8)</strong></td>
<td>Acenocoumarol (nicoumalone), Apixaban, Dabigatran, Dalteparin, Enoxaparin, Fondaparinux, Heparin, Rivaroxaban, Tinzaparin, Warfarin</td>
</tr>
<tr>
<td><strong>Antiplatelet Drugs</strong></td>
<td>Acetylsalicylic Acid, Clopidogrel, Prasugrel, Ticagrelor, Ticloidipine</td>
</tr>
<tr>
<td><strong>Anticonvulsants (1,2,5,6,7)</strong></td>
<td>Brivaracetam (1,2,5), Carbamazepine (1,2,6), Clonazepam (1,2,5), Ethosuximide (1,2,5), Gabapentin (1,2,5,6), Lacosamide (1,2,5,6), Lamotrigine (1,2,6), Levetiracetam (1,2,5), Oxcarbazepine (1,2,5,6), Phenobarbital (1,2), Phenytoin (1,2,5,7), Pregabalin (1,2,6), Primidone (1,2), Rufinamide (1,2,5), Topiramate (1,2), Valproic acid (1,2,5), Vigabatrin (1,2)</td>
</tr>
<tr>
<td><strong>Antidepressants (1,2,3,5,6,7)</strong></td>
<td>Amitriptyline, Bupropion, Citalopram (1,2,3,6,7), Clomipramine, Desipramine, Desvenlafaxine, Doxepin, Duloxetine, Escitalopram (1,2,3,6,7), Fluoxetine (1,2,3,6,7), Fluvoxamine (1,2,3,6,7), Imipramine, Lithium, Maprotiline, Mirtazapine, Moclobemide, Nortriptyline, Paroxetine (1,2,3,6,7), Sertraline (1,2,3,6,7), Tranylcypromine (2,3), Trazodone, Trimipramine, Venlafaxine, Vortioxetine</td>
</tr>
<tr>
<td><strong>Antidiabetic drugs</strong></td>
<td>Albiglutide (11), Canagliflozin (3,7), Chlorpropamide (11), Dapagliflozin (3,7), Delaglutide (11), Empagliflozin (3,7), Exenatide (11), Gliclazide (11), Glimepiride (11), Glyburide (11), Insulin (10), Liraglutide (AHFS), Repaglinide (11), Pioglitazone (7), Tolbutamide (11)</td>
</tr>
<tr>
<td><strong>Antiemetics</strong></td>
<td>Aprepitant (2,5), Dimenhydrinate (1), Fosaprepitant (2,5), Nabilone (1,2,3,6), Scopolamine (1,6)</td>
</tr>
<tr>
<td><strong>Antihistamines, sedating (1)</strong></td>
<td>Brompheniramine, Cetirizine, Chlorpheniramine, Diphenhydramine, Hydroxyzine, Trimeprazine</td>
</tr>
<tr>
<td><strong>Cold Medications that contain sedating antihistamines (1)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Antihypertensive Drugs, other (see 12)</strong></td>
<td>Beta blockers, Calcium Channel Blockers</td>
</tr>
<tr>
<td><strong>Antiparkinson Drugs (1,3,5)</strong></td>
<td>Bromocriptine (1,3), Entacapone (1,3,5), Levodopa (1,3,5), Pramipexole (1,3,5), Rasagiline (1,3,5), Rotigotine (1,3,5), Selegiline (3,5)</td>
</tr>
<tr>
<td><strong>Antipsychotics and Related Drugs (1,3,4)</strong></td>
<td>Aripiprazole, Asenapine, Chlorpromazine, Clozapine, Flupenthixol, Fluphenazine, Haloperidol, Loxapine, Lurasidone, Methotrimeprazine, Olanzapine, Paliperidone, Perphenazine, Pimozide, Prochlorperazine, Quetiapine, Risperidone, Thiothixene, Trifluoperazine, Ziprasidone, Zuclopenthixol</td>
</tr>
<tr>
<td><strong>Caffeine, large amounts (7)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cannabinoids (1,2,3)</strong></td>
<td>Cannabidiol, Marijuana</td>
</tr>
<tr>
<td><strong>Chemotherapy (7)</strong></td>
<td>Anastrozole, Bicalutamide, Buserelin, Exemestane, Goserelin, Histrelin, Letrozole, Leuprolide, Methotexate, Triptorelin</td>
</tr>
<tr>
<td><strong>Cholinesterase inhibitors (13)</strong></td>
<td>Donepezil, Galantamine, Rivastigmine</td>
</tr>
<tr>
<td>Medications</td>
<td>Possible mechanisms</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Corticosteroids, oral (7)</td>
<td>Beclomethasone, Betamethasone, Budesonide, Ciclesonide, Cortisone, Dexamethasone, Fludrocortisone, Fluticasone, Hydrocortisone, Methylprednisolone, Mometasone, Prednisolone, Prednisone, Triamcinolone</td>
</tr>
<tr>
<td>Corticosteroids, inhaled, high-dose (7)</td>
<td></td>
</tr>
<tr>
<td>Digoxin (mechanism unknown)</td>
<td></td>
</tr>
<tr>
<td>Diuretics, loop and thiazide</td>
<td>Bumetanide, Chlorthalidone, Furosemide, Hydrochlorothiazide, Indapamide, Metolazone</td>
</tr>
<tr>
<td>Eye drops (6)</td>
<td></td>
</tr>
<tr>
<td>Herbal products, Natural Health Products, Natural Sleep Aids, Natural Products for Sexual Enhancement (possible adulteration with undeclared drugs)</td>
<td></td>
</tr>
<tr>
<td>Metoclopramide (1,2,4)</td>
<td></td>
</tr>
<tr>
<td>Muscle Relaxants (1,2)</td>
<td>Baclofen, Chlortrazapine, Dantrolene, Methocarbamol, Orphenadrine, Tizanidine</td>
</tr>
<tr>
<td>Nitrates (2,3,13)</td>
<td>Isosorbide dinitrate, Isosorbide mononitrate, Nitroglycerin</td>
</tr>
<tr>
<td>NSAIDs</td>
<td>ASA/acyethylsalicylic acid (8)</td>
</tr>
<tr>
<td>Opiates/Narcotics (1,2,3)</td>
<td>Buprenorphine, Butorphanol, Codeine, Fentanyl, Hydromorphone, Meperidine, Methadone, Morphine, Oxycodone, Sufentanil</td>
</tr>
<tr>
<td>Proton Pump Inhibitors (9)</td>
<td>Dexlansoprazole, Esomeprazole, Lansoprazole, Omeprazole, Pantoprazole, Rabeprazole</td>
</tr>
<tr>
<td>Sedative/hypnotics, Benzodiazepines Barbiturates (1,2,5)</td>
<td>Alprazolam, Bromazepam, Buspirone, Chloral hydrate, Chordiazepoxide, Clobazam, Clonazepam, Clorazepate, Diazepam, Diphenhydramine, Doxylamine, Flurazepam, Lorazepam, Midazolam, Nitrazepam, Oxazepam, Phenobarbital, Temazepam, Triazolam, Zopiclone</td>
</tr>
</tbody>
</table>

Possible mechanisms (often unclear): (1) Drowsiness; (2) Dizziness; (3) Hypotension/orthostatic hypotension; (4) Parkinsonian effects; (5) Ataxia/gait disturbance; (6) Vision disturbance; (7) Osteoporosis or reduced bone mineral density increases the fracture risk if a fall occurs; (8) Risk of serious bleeding if a fall occurs. Individualize therapy. (9) Fracture risk; mechanism unclear. (10) Hypoglycemia. (11) Theoretical due to potential hypoglycemia. (12) Conflicting evidence; many studies do not find an association between antihypertensive drugs and falls or fractures with beta blockers, ARBs, calcium channel blockers or diuretics; caution with high doses and when beginning therapy. (13) Syncope.

Drugs are listed by generic (chemical) name under each drug group. For Brand (manufacturer’s) names, check in the Compendium of Pharmaceuticals and Specialties under the generic product monograph.

This list includes only those drugs for which there is evidence of increased risk of falls or their consequences or a logical potential risk. There may be other drugs that increase this risk in certain patients.
Appendix C: Medication Review

- Be aware of inappropriate medications with potential to harm patients with frailty. Weigh the benefits and risks of each and all medications. Not all polypharmacy is inappropriate.

- Consider requesting a medication review by a pharmacist when a potential or existing drug-related problem has been identified. Many community pharmacists are trained in medication reviews.

- **BC Pharmacare covers the cost of a medication review by a pharmacist for eligible BC residents.** For information on patient eligibility, see [www2.gov.bc.ca: PharmaCare Policy Manual](http://www2.gov.bc.ca).

- Consider a team-based phone call about medication review results. Physicians may be eligible for conference and telephone management incentive fees – see [www.gpscbc.ca: Billing Guides](http://www.gpscbc.ca).

- Communication between care providers is essential for effective medication management. Prescribers must work with pharmacists, supporting health care providers, and the patient and caregivers to ensure potentially inappropriate medications are avoided; medications and doses are appropriate to goals of care, pill burden is minimized, and side effects are not treated with more medications without considering medication-related causes.

![Figure 1: Medication Review Algorithm for Older Adults with Frailty](image)

**Common drug-related problems:**
- Adverse drug reactions
- Drug interactions
- Dose too high or too low
- Improper drug selection
- Unnecessary drug
- Omission of necessary drug
- Inappropriate adherence

STEP 1: COMPILe BEST POSSIBLE MEDICATION HISTORY – see Best Possible Medication History

- Get a list of drugs from the patient’s pharmacy or PharmaNet. Physicians and nurse practitioners licensed in BC can get community access to PharmaNet – see www2.gov.bc.ca: Community Health Practice Access to PharmaNet. Other sources of information include: product labels, medical records; hospital discharge summaries; and interviews with the patient, family or caregivers.

- Collect and document all pertinent information about the patient’s current and recently discontinued medications, including prescription and non-prescription drugs and natural health products. If appropriate, have the patient bring all his/her medications into the appointment. Information to be collected includes:
  - Medication name
  - Strength and dosage form
  - Directions
  - Name of prescriber
  - Indication
  - Date started and stopped
  - How medication actually taken
  - Adverse drug events
  - Other relevant information (e.g., lipid profile, HbA1C levels, INR)

- Assess adherence to medication regimen (prescribed vs. actual use). Consider patient-specific factors (e.g. cognition, beliefs, vision, swallowing, manual dexterity); lack of patient adherence may be due to sensory or cognitive deficits. Encourage the use of medication organizers/packaging, including medication blister packs, dosettes and pouch strips to improve adherence.

STEP 2: IDENTIFY HIGH RISK MEDICATIONS

- Consider if any medications are contributing to medical problems. Potentially inappropriate medications may cause adverse drug events in patients with frailty due to pharmacological properties interacting with physiological changes of aging and/or existing medical conditions.

- Be aware of “prescribing cascades”: an adverse reaction interpreted as a new medical condition, and additional drug therapy ordered to treat this problem.

- Deprescribing tools can be used to identify potentially inappropriate medications but are not intended to replace clinical judgement or individualization of care.

<table>
<thead>
<tr>
<th>Deprescribing Tools</th>
<th>Online Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beers Criteria²</td>
<td><a href="http://medstopper.com/">http://medstopper.com/</a></td>
</tr>
<tr>
<td>STOPP/START³</td>
<td>Deprescribing.org</td>
</tr>
<tr>
<td></td>
<td>Uiowa.edu: Drugs with Anticholinergic Effects</td>
</tr>
<tr>
<td></td>
<td>Polypharmacy.ca</td>
</tr>
<tr>
<td></td>
<td>SharedCareBC.ca: Polypharmacy Risk Reduction Initiative</td>
</tr>
</tbody>
</table>

STEP 3: VALIDATE INDICATIONS FOR EACH HIGH-RISK MEDICATION

- Match each medication with an established medical problem. Validation involves two steps:
  1) verify the diagnosis against formal diagnostic criteria; and then
  2) verify the evidence supporting the benefits of using the medication in patients with frailty (improvement of symptoms, function, quality of life, and risk of future adverse drug events.

- Engage the patient in the discussion/decision-making, clarifying the patient’s health care goals and willingness to carry out the therapeutic plan. Older patients often have different therapeutic outcomes/objectives than younger patients. Quality of life rather than therapeutic efficacy is generally more important in patients with short life expectancy.

STEP 4: CONSIDER PREVIOUS DISCONTINUATION TRIALS

- Consider discontinuing a medication where there is either no valid diagnosis or indication of a previous discontinuation trial. If a previously discontinued medication was restarted due to withdrawal symptoms, disease relapse, or other reasons, further assessment is needed.
STEP 5: ASSESS WHETHER THE MEDICATION IS PROVIDING ONGOING SYMPTOMATIC BENEFIT

- Medications used in patients with frailty should be prioritized according to their ability to suppress disabling or troubling symptoms or current active medical conditions, rather than the primary or secondary disease prevention (especially if unlikely to occur during remaining lifespan).

- Medications fall under two categories:

<table>
<thead>
<tr>
<th>Medications providing immediate symptomatic benefits (e.g. analgesics) or are essential to preventing rapid symptomatic deterioration (e.g., diuretics and ACE inhibitors for severe heart failure)</th>
<th>Medications having no effect on symptoms and primarily used to prevent disease complications in the medium to long-term</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk medications in this category need to be assessed based on a balance between the:</td>
<td></td>
</tr>
<tr>
<td>• magnitude of immediate symptomatic benefit;</td>
<td></td>
</tr>
<tr>
<td>• magnitude of the risk of short-term harm; and</td>
<td></td>
</tr>
<tr>
<td>• availability of equally effective non-pharmacological treatments.</td>
<td></td>
</tr>
<tr>
<td>High risk medications in this category should be considered for discontinuation unless the risk of a catastrophic disease event in very high and likely to occur within 6 to 12 months.</td>
<td></td>
</tr>
</tbody>
</table>

STEP 6: ASSESS WHETHER THE PATIENT IS EXPERIENCING ADVERSE DRUG EVENTS

- A discontinuation trial is warranted where a current high-risk medication is causing or has caused adverse drug events.

STEP 7: CONSIDER WITHDRAWING, ALTERING, OR CONTINUING MEDICATIONS

- Any decision on stopping, altering, or continuing medications must be tailored to the clinical status of individual patients – consider patient life expectancy, goals of care, values and preferences, and the medication’s likely impact on the patient’s quality of life. Consider the following:
  - changing to a safer alternative from the same or a pharmacologically similar medication class;
  - using a non-pharmacological treatment, when available and appropriate;
  - adjusting medication dosage or frequency;
  - withdrawing the medication; and
  - continuing the medication, as currently prescribed/used.

STEP 8: CONDUCT REGULAR, ONGOING MEDICATION REVIEWS

- Consider monitoring requirements for medications. Medication reviews should be conducted regularly based on clinical judgement, but particularly after changes in care settings, discharge from hospital, significant changes in health status, or changes in medication regimen.

Notes:

1. The STOPP/START tool has been shown to be superior to the Beers Criteria for predicting hospitalization and improving outcomes in the elderly but is more time consuming to apply than the Beers Criteria. See Boland B, Guignard B, Dalleur O, Lang P-O. Application of STOPP/START and Beers criteria: Compared analysis on identification and relevance of potentially inappropriate prescriptions. European Geriatric Medicine. 2016 Sep;7(5):416–23.
Facts About Falls

**Common Misunderstanding: If you fall and don’t get hurt, keep it to yourself, it’s inevitable**

**Fact: Falls are preventable, even as you get older.** One in three British Columbians over the age of 65 fall each year. Most falls result in minor injuries, such as bruises, but about 10% to 15% percent result in serious injuries, such as broken bones. **It’s important to remember that falls are not a normal part of getting older; falls are preventable and anyone can reduce their risk of falls significantly.** If you fall, even if you don’t get hurt, make an appointment to discuss reducing your falls risk with your doctor.

**Common Misunderstanding: Most falls happen outside, because of hazards like uneven sidewalks, or icy steps**

**Fact: Most falls happen inside the home, not outside.** Further, injuries from falls occur not because we tripped over something – that happens at any stage of life, especially with Canadian winters, pets underfoot, or kids leaving toys around – but because seniors often lack the leg strength to stop falling after they are tripped by something.

**Common Misunderstanding: Reducing your fall risk takes a lot of time and money**

**Fact: There are simple steps anyone can take to reduce their fall risk that are free or cost very little!**

- **Exercise:** The best way for anyone to reduce their risk of falling is to increase their strength and balance through exercise. Anyone can call HealthLinkBC at 8-1-1 to talk to an exercise professional for free. They can walk you through a physical activity readiness questionnaire and provide advice on classes in the community, many of which are offered at low cost. For no cost exercises, there are Strategies and Actions for Independent Living (SAIL) online videos on FindingBalanceBC.ca that seniors can use to follow along at home. Ensure that you choose a safe level of exercise to start from. Anyone, no matter how frail, can increase their strength and balance.

- **Vision Assessments:** MSP covers routine eye examinations for those 65 years of age and older. As vision can change quickly as we get older, it’s important to make sure prescriptions are up to date.

- **Medication Reviews:** Some medications can interact with one another to cause dizziness and seniors may be on a higher dose of medications than they need. You can review your medications with your doctor or a pharmacist in person, or a pharmacist over the phone at HealthLinkBC at 8-1-1.

- **Home Hazard Assessment and Modifications:** It’s important to remove slip and trip hazards from the home. These can include throw rugs, cords, and piles of clutter. It can also be helpful to install supports, such as grab bars. The BC Housing Home Adaptations For Independence program provides grants for low income seniors. Pay attention to footwear; slippers without grips, or open backs, as they can be a fall hazard.
### Staying Independent Checklist

You can open this questionnaire as an interactive brochure. Complete the form online, then print your results: https://www2.gov.bc.ca/assets/gov/people/seniors/health-safety/pdf/staying_independent_checklist_interactive.pdf

Please Circle “Yes” or “No” for each statement below

<table>
<thead>
<tr>
<th>Check your risk of falling</th>
<th>Actions to Staying Independent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (2) No (0) I have fallen in the last 6 months*</td>
<td>Learn more on how to reduce your fall risk, as people who have fallen are more likely to fall again.</td>
</tr>
<tr>
<td>Yes (2) No (0) I use or have been advised to use a cane or walker to get around safely.</td>
<td>Talk with a physiotherapist about the most appropriate walking aid for your needs.</td>
</tr>
<tr>
<td>Yes (1) No (0) Sometimes, I feel unsteady when I am walking.</td>
<td>Exercise to build up your strength and improve your balance, as this is shown to reduce the risk for falls.</td>
</tr>
<tr>
<td>Yes (1) No (0) I steady myself by holding onto furniture when walking at home.</td>
<td>Incorporate daily balance exercises and reduce home hazards that might cause a trip or slip.</td>
</tr>
<tr>
<td>Yes (1) No (0) I am worried about falling.</td>
<td>Knowing how to prevent a fall can reduce fear and promote active living.</td>
</tr>
<tr>
<td>Yes (1) No (0) I need to push with my hands to stand up from a chair.</td>
<td>Strengthening your muscles can reduce your risk of falling and being injured.</td>
</tr>
<tr>
<td>Yes (1) No (0) I have some trouble stepping up onto a curb.</td>
<td>Daily exercise can help improve your strength and balance.</td>
</tr>
<tr>
<td>Yes (1) No (0) I often have to rush to the toilet.</td>
<td>Talk with your doctor or incontinence specialist about solutions to decrease the need to rush to the toilet.</td>
</tr>
<tr>
<td>Yes (1) No (0) I have lost some feeling in my feet.</td>
<td>Talk with your doctor or podiatrist, as numbness in the feet can cause stumbles and falls.</td>
</tr>
<tr>
<td>Yes (1) No (0) I take medicine that sometime makes me feel light-headed or more tired than usual.</td>
<td>Talk with your doctor or pharmacist about medication side effects that may increase the risk of falls.</td>
</tr>
<tr>
<td>Yes (1) No (0) I take medicine to help me sleep or improve my mood.</td>
<td>Talk with your doctor or pharmacist about safer alternatives for a good night’s sleep.</td>
</tr>
<tr>
<td>Yes (1) No (0) I often feel sad or depressed.</td>
<td>Talk with your doctor about symptoms of depression and help with finding positive solutions.</td>
</tr>
</tbody>
</table>

- Add up the number of points in parentheses for each “yes” response.
- If you scored 3 or less and HAVE NOT fallen, you are at low risk of falling.
- *If you scored 3 or less and HAVE fallen in the last year, you may be at risk of falling.
- If you scored 4 points or more, you may be at risk for falling.
- Discuss this brochure with your doctor to find ways to reduce your risk.

The above checklist was developed by the Greater Los Angeles VA Geriatric Research Education Clinical Center and affiliates and is a validated fall risk self-assessment tool (Vivrette, Rubenstein, Martin, Josephson & Kramer, 2011).
Assessing Canes1,2

Using a Cane and Fit:

- If you are using a cane because one leg is weak or painful, hold the cane on the opposite side from the weak or painful leg. For example, if your right hip is sore, hold the cane in your left hand.
- If you are using the cane for a little help with balance and stability, hold it in the hand you use less. If you are right-handed, you'll probably want to hold the cane in your left hand to leave your right hand free for other things. Hold the cane close to your body so you can push straight down on it.
- Be sure your cane fits you. When you stand up in your normal posture with the cane tip on the ground, the handle of the cane should be next to the top of your leg. Your elbow should be slightly bent.

Choosing a Grip: Consider a foam grip or a grip that is shaped to fit your hand. If you have trouble grasping with your fingers — because of arthritis or other joint pains — you might prefer a larger grip. Choosing the correct grip is a matter of personal preference, and it will also relieve unnecessary stress on your joints and help prevent joint deformities. Numbness or pain in your hand or fingers might signal that your cane's grip isn't a good fit for your hand. Your physiotherapist can help you choose the best grip.

General Safety Tips

- Look straight ahead, not down at your feet.
- Be sure the rubber tips on your cane are clean and in good condition to help prevent slipping. You can buy replacement tips from medical supply stores and pharmacies.
- Ice tips are also available to use outdoors in winter weather.
- Never use your cane to help you stand up or sit down. Even if you still have one hand on your cane, put the other hand on the surface you are sitting on or the arm of your chair. Use that hand to guide you as you sit down, and to push with as you stand up. If you are less steady on your feet, rest your walking aid securely nearby, so it doesn't fall and you can reach it easily. And use both hands on the sitting surface to help you sit down or stand up.

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1 Adapted from: https://www.mayoclinic.org/healthy-lifestyle/healthy-aging/multimedia/canes/sls-20077060?s=3

2 Adapted from: https://www.healthlinkbc.ca/health-topics/zt1156

BCGuidelines.ca: Falls: Prevention, Risk Assessment and Management for Community-Dwelling Older Adults (2020) 24
Falls in Winter – Tips to Stay Fall Free\textsuperscript{1,2,3,4,5}

Winter weather such as snow and ice, creates slippery settings and makes a fall more likely, use these tips to stay fall free:

### Choose your footwear carefully

- Check your traction: wear boots and shoes with a good grip.
- Consider using an anti-slip shoe traction device or ice cleats on your shoes. Even though you have these devices on, you still need to avoid icy and slippery surfaces. Always take off these grips or cleats when indoors because they may make you slip on indoor flooring.

### Plan ahead

- Make sure you have enough time to get where you’re going. Your chances of falling increase when you’re running late and rushing.
- Be aware of winter weather conditions.
- Let people know your plans and take a cell phone with you when you leave your house.
- If you experienced a fall, what would you do? Being prepared in the event of a fall that someone can assist in getting help as quickly as possible, and may even save your life.

### Use caution as you walk

- Walk like a penguin to prevent falls on snow and ice
  - Walking like a penguin means moving slowly and taking very small steps.
  - Keep your feet pointed outward to allow for wider base of support and your knees slightly bent to lower your center of gravity.
  - Your hands should be kept out to your side and out of your pockets for balance like a penguin’s wings. Wear gloves so you can keep your hands out of your pockets.
  - Keep your head up and don’t lean forward.
  - See the video link from Alberta Health Services for more information: [https://www.youtube.com/watch?v=LHaWGibGwyk](https://www.youtube.com/watch?v=LHaWGibGwyk)
- Walk on cleared walkways. Use the safest route to your location and the safest route into the building.
- Find a path around snow or ice when you can.
- Be alert for hidden ice. Assume all wet, dark areas on pavement may be slippery or icy. If you can walk around them.
- Use a backpack to keep your hands free and avoid carrying anything heavy that may make you lose your balance or that blocks your view as you walk.
- If you use a cane, you can buy an ice tip to attach to the cane.
- Avoid texting or talking on your phone and walking at the same time.
- Be careful getting on or off a bus. Bus steps or the road may be slippery.
- Be careful getting in and out of your car. Hold onto your car door or car as you get out to give yourself extra support.
Use handrails on stairs and ramps

- If you’re walking on a slope where there are no handrails, be extra careful.
- Check your railings and ensure they are sturdy as they may save you from an unexpected fall.

Remove snow as soon as you can from your porch, steps, walkway and driveway

- Keep your salt and shovel indoors to avoid slipping while on your way to the garage or storage shed to get it.
- Spread sand or grit on your steps and walkways. You could also try carrying a small container of sand or grit to sprinkle on icy or sloped surfaces that you can’t walk around.

Stay active

- On especially bad weather days, if you don’t need to go out don’t, wait for the weather and sidewalks to clear.
- If ice and snow make it unsafe to exercise outdoors, stay active with an indoor routine that includes strengthening and balance exercises.
- Don’t let your fear of falling get in the way of winter outdoor activities. Staying indoors can cause deconditioning that will increase your fall risk.

Ask for help

- Most people are willing to help you navigate across a slippery sidewalk or parking lot or to help with snow removal.
- If entrances or sidewalks are not safe, ask people to help remove the snow or use de-icer. Businesses and property managers can help reduce the dangers.
- Plan ahead for snow and icy days.

Adapted from:
2. Centre for Hip Health and Mobility. Tips for Staying Fall-Free this Winter. http://www.hiphealth.ca/blog/tips-for-staying-fall-free-this-winter
Footwear checklist\textsuperscript{1,2,3,4,5,6}

Research shows that elderly people often wear inappropriate footwear that increases their risk of falls.\textsuperscript{1,2,3} The US CDC’s Stopping Elderly accidents, Deaths and Injuries Initiative (STEADI) recommends assessment of patients $\geq 65$ years for foot and shoe problems.\textsuperscript{4} Practitioners may also refer their patients to a pedorthist for foot orthoses and footwear and/or provide this checklist to their patient.

Image adapted from: www.findingbalanceontario.ca

See next page
Safe footwear checklist
The requirement for safe, well fitting shoes varies, depending on the individual and their level of activity. The features outlined below may help in the selection of an appropriate shoe:

- **Heel:**
  a) Have a low heel (i.e. less than 2.5cm) to ensure stability and better pressure distribution on the foot. A straight-through sole is also recommended
  b) Have a broad heel with good ground contact
  c) Have a firm heel counter to provide support for the shoe.

- **Sole:** Have a cushioned, flexible, non-slip sole. Rubber soles provide better stability and shock absorption than leather soles. However, rubber soles do have a tendency to stick on some surfaces.

- **Weight:** Are lightweight.

- **Toe box:** Have adequate width, depth and height in the toe box to allow for natural spread of toes.

- **Fastenings:** Have laces, buckles, elastic or velcro to hold the shoe securely onto the foot.

- **Uppers:** Are made from accommodating material. Leather holds its shape and breathes well; however, many people find walking shoes with soft material more comfortable.

- **Safety:** Protect feet from injury.

- **Shape:** Are the same shape as the feet, without causing pressure or friction to the foot.

- **Purpose:** Are appropriate for the activity being undertaken during their use. Sports or walking shoes may be ideal for daily wear. Slippers generally provide poor foot support and may only be appropriate when sitting.

- **Orthoses:** Have comfortably accommodating orthoses, such as ankle foot orthoses or other supports, if required. The podiatrist, orthotist or physiotherapist can advise the best style of shoe if orthoses are used.

Adapted from:

3. Menz HB, Sherrington C. Footwear Assessment Form: a reliable clinical tool to assess footwear characteristics of relevance to postural stability in older adults.
6. Queensland Government-Stay On Your Feet
Fall Prevention Referral Options Resource Guide for Patients and Caregivers

Occupational Therapist
- See: https://www.caot.ca/site/findot
- A referral may be required to access an occupational therapist and extended health insurance may cover their services.

Physiotherapist
- See: https://bcphysio.org/find-a-physio?&form=yesg
- A referral is not required for a physiotherapist visit however some extended health plans do require one.

Podiatrist
- See: http://www.bcpodiatrists.ca/
- A referral is not required for a podiatrist visit however some extended health plans do require one.

Pedorthist
- See: https://www.pedorthic.ca/find-a-pedorthist/
- A referral is not required for a pedorthist visit however some extended health plans do require one.

Dietician
- Dietitian services are offered through HealthLinkBC.ca or 8-1-1

Home and Community Care
- For help finding information on social and health resources in your local community, see BC211 at www.bc211.ca
Case managed services available to eligible patients through Home and Community Care within local health authorities include:
  - community nursing for acute, chronic, palliative or rehabilitative support;
  - community occupational therapist, physiotherapist, dietician consultation as available and appropriate;
  - adult day services for personal care, health care and social and recreational activities;
  - home support for assistance with activities of daily living;
  - caregiver respite/relief;
  - assisted living and facility-based care; and/or
  - end-of-life care services.
For more information, see www2.gov.bc.ca: Home and Community Care or contact your local health authority.

HealthLinkBC.ca or 8-1-1
8-1-1 is a free-of-charge provincial health information and advice phone line available to British Columbians. The 8-1-1 phone line is operated by HealthLink BC, which is part of the Ministry of Health.
Registered nurses, registered dietitians, qualified exercise professionals, or a pharmacists are available through HealthLinkBC.ca or 8-1-1.