

THE UNRECOGNIZED SIGNIFICANT MORBIDITY OF FALLS: PREDICTABLE AND PREVENTABLE

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DISCLOSURES

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The Burden of Falls in BC



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The burden of falls among older adults in BC

Every **30 minutes** one older adult is **hospitalized** with fall-related injuries.¹

Every **year** falls among older adults result in a total cost of **\$1.14 billion**.²

Every **day** approximately three older adults **die** due to fall-related injuries.³

1. BC Ministry of Health (2021). Discharge Abstract Database (DAD), BCIRPU Injury Data Online Tool.
2. BC Ministry of Health (2022). BC Vital Statistics. Retrieved from BCIRPU Injury Data Online Tool.
3. BC Injury Research and Prevention Unit. (2022). Cost of Injury in British Columbia.

Leading Causes of Hospitalizations by Age Group, British Columbia, 2021/2022

Counts (Crude rate per 100,000)

	<1 year	1-4 years	5-9 years	10-14 years	15-19 years	20-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65 – 74 years	75 – 84 years	85+ years	Total
1	Perinatal conditions 14,775 (16,809.0)	Digestive system diseases 2,129 (1,556.2)	Digestive system diseases 4,547 (1,829.8)	Digestive system diseases 1,600 (623.4)	Mental/behav. disorders 3,650 (1,356.2)	Mental/behav. disorders 3,837 (1,146.9)	Digestive system diseases 10,801 (1,377.4)	Digestive system diseases 11,670 (1,571.11)	Digestive system diseases 20,672 (3,087.0)	Digestive system diseases 30,693 (4,175.1)	Neoplasms 37,692 (6,113.6)	Eye and adnexa diseases 28,386 (8,673.8)	Circulatory system diseases 11,140 (8,669.1)	Digestive system diseases 149,080 (2,793.1)
2	Congenital anomalies 1,934 (2,200.3)	Respiratory system diseases 1,475 (1,078.2)	Injury, poisoning, other ext. causes 903 (363.4)	Mental/behav. disorders 1,306 (508.8)	Digestive system diseases 2,139 (794.8)	Digestive system diseases 3,294 (984.6)	Mental/behav. disorders 8,700 (1,109.4)	Mental/behav. disorders 7,772 (1,046.3)	Neoplasms 12,116 (1,809.3)	Neoplasms 27,072 (3,682.5)	Eye and adnexa diseases 34,892 (5,661.0)	Neoplasms 19,854 (6,066.7)	Injury, poisoning, other ext. causes 7,426 (5,778.9)	Neoplasms 110,547 (2,071.2)
3	Respiratory system diseases 510 (580.2)	Congenital anomalies 727 (531.4)	Respiratory system diseases 636 (255.9)	Injury, poisoning, other ext. causes 1,141 (444.6)	Injury, poisoning, other ext. causes 2,087 (775.4)	Injury, poisoning, other ext. causes 2,144 (640.8)	Injury, poisoning, other ext. causes 5,616 (716.2)	Genitourinary diseases 6,806 (916.3)	Genitourinary diseases 10,460 (1,562.0)	Circulatory system diseases 13,185 (1,793.5)	Digestive system diseases 32,258 (5,233.6)	Digestive system diseases 18,526 (5,660.9)	Digestive system diseases 6,348 (4,940.0)	Eye and adnexa diseases 85,923 (1,609.8)
4	Genitourinary diseases 184 (209.3)	Injury, poisoning, other ext. causes 608 (444.4)	Genitourinary diseases 323 (130.0)	Musculo-skeletal diseases 372 (144.9)	Genitourinary diseases 719 (267.1)	Genitourinary diseases 1191 (356.0)	Genitourinary diseases 4,220 (538.1)	Injury, poisoning, other ext. causes 6,071 (817.3)	Injury, poisoning, other ext. causes 6,111 (912.6)	Genitourinary diseases 11,790 (1,603.8)	Circulatory system diseases 18,558 (3,010.9)	Circulatory system diseases 18,065 (5,520.1)	Eye and adnexa diseases 5,483 (4,266.8)	Circulatory system diseases 68,310 (1,279.8)
5	Digestive system diseases 163 (185.4)	Infectious & parasitic diseases 322 (235.4)	Congenital anomalies 299 (120.3)	Genitourinary diseases 322 (125.5)	Musculo-skeletal diseases 677 (251.5)	Respiratory system diseases 954 (285.2)	Respiratory system diseases 2,314 (295.1)	Neoplasms 4,960 (667.8)	Mental/behav. disorders 5,882 (878.4)	Injury, poisoning, other ext. causes 9,849 (1,339.7)	Genitourinary diseases 13,848 (2,246.7)	Genitourinary diseases 11,046 (3,375.3)	Neoplasms 5,138 (3,998.4)	Genitourinary diseases 63,849 (1,196.2)
6	Skin/subcutaneous tissue diseases 124 (141.1)	Infectious & parasitic diseases 301 (220.0)	Eye & adnexa diseases 247 (99.4)	Respiratory system diseases 321 (125.1)	Respiratory system diseases 638 (237.1)	Musculo-skeletal diseases 723 (216.1)	Musculo-skeletal diseases 2,220 (283.1)	Musculo-skeletal diseases 2,955 (397.8)	Circulatory system diseases 4,634 (692.0)	Eye and adnexa diseases 8,897 (1,210.2)	Musculo-skeletal diseases 11,363 (1,843.6)	Injury, poisoning, other ext. causes 8,320 (2,542.3)	Genitourinary diseases 5,071 (3,945.2)	Injury, poisoning, other ext. causes 57,921 (1,085.2)
7	Infectious & parasitic diseases 119 (135.4)	Eye & adnexa diseases 256 (187.1)	Nervous system diseases 230 (92.6)	Congenital anomalies 266 (103.6)	Neoplasms 313 (116.3)	Neoplasms 415 (124.0)	Neoplasms 1,783 (227.4)	Respiratory system diseases 2,398 (322.8)	Musculo-skeletal diseases 4,578 (683.7)	Musculo-skeletal diseases 8,434 (1,147.2)	Diseases of blood, blood-forming organs & immune system 10,753 (1,744.6)	Musculo-skeletal diseases 7,143 (2,182.7)	Respiratory system diseases 3,944 (3,069.2)	Mental/behav. disorders 43,682 (818.4)
8	Nervous system diseases 102 (116.0)	Nervous system diseases 245 (179.1)	Musculo-skeletal diseases 174 (70.0)	Nervous system diseases 185 (72.1)	Skin/subcutaneous tissue diseases 220 (81.7)	Circulatory system diseases 289 (86.4)	Endocrine, nutrition & metab. diseases 889 (113.4)	Circulatory system diseases 1,855 (249.7)	Respiratory system diseases 2,801 (418.3)	Mental/behav. disorders 4,770 (648.8)	Injury, poisoning, other ext. causes 9,262 (1,502.7)	Respiratory system diseases 5,190 (1,585.9)	Mental/behav. disorders 2,656 (2,066.9)	Musculo-skeletal diseases 42,224 (791.1)
9	Injury, poisoning, other ext. causes 78 (88.7)	Neoplasms 187 (136.7)	Neoplasms 169 (68.0)	Endocrine, nutrition & metab. diseases 179 (69.7)	Endocrine, nutrition & metab. diseases 216 (80.3)	Endocrine, nutrition & metab. diseases 280 (83.7)	Infect. and parasitic diseases 783 (99.9)	Endocrine, nutrition & metab. diseases 1,128 (249.7)	Eye and adnexa diseases 2,028 (302.8)	Respiratory system diseases 3,920 (533.2)	Respiratory system diseases 5,643 (915.5)	Mental/behav. disorders 2,704 (826.3)	Musculo-skeletal diseases 2,512 (1,954.8)	Respiratory system diseases 29,759 (557.6)
10	Neoplasms 52 (59.2)	Ear & mastoid process diseases 157 (114.8)	Ear & mastoid process diseases 160 (64.4)	Neoplasms 178 (69.4)	Nervous system diseases 206 (76.5)	Skin and subcutaneous tissue diseases 255 (76.2)	Skin and subcutaneous tissue diseases 755 (96.3)	Nervous system diseases 1,021 (137.5)	Endocrine, nutrition & metab. diseases 1,537 (229.5)	Endocrine, nutrition & metab. diseases 2,362 (321.3)	Mental/behav. disorders 3,164 (513.3)	Endocrine, nutrition & metab. diseases 2,357 (720.2)	Infectious and parasitic diseases 1,499 (1,166.5)	Diseases of blood, blood-forming organs & immune system. 16,139 (302.4)

Source: Discharge Abstract Database, BC Ministry of Health. Extraction of this data is based on all 2022/23 hospitalizations by diagnosis chapter and age group, including Acute care, Rehab and Day surgery.
 Note: "Pregnancy, childbirth and the puerperium", "Factors influencing health status and contact with health services", and "Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified" were excluded in the table above.

Leading Causes of Injury Hospitalization, British Columbia, 2021/22, Males and Females Combined

Counts (Crude hospitalization rate per 100,000 population)

	0-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	All Ages
1	Fall 215 (95.9)	Fall 454 (184.0)	Fall 329 (130.3)	Self-harm 1190 (198.1)	Fall 1105 (146.0)	Fall 1213 (169.0)	Fall 1614 (241.1)	Fall 3283 (445.2)	Fall 4808 (798.8)	Fall 6040 (1962.0)	Fall 7631 (6133.8)	Fall 27471 (524.3)
2	Unintentional Poisoning 103 (46.0)	Foreign Object 75 (30.4)	Self-harm 298 (118.0)	Fall 779 (129.7)	Transport Incidents 1052 (139.0)	Transport Incidents 915 (127.5)	Transport Incidents 938 (140.1)	Transport Incidents 976 (132.3)	Transport Incidents 646 (107.3)	Transport Incidents 347 (112.7)	Environmental/ Natural Factor 291 (233.9)	Transport Incidents 5948 (113.5)
3	Foreign Object 82 (36.6)	Transport Incidents 61 (24.7)	Transport Incidents 171 (67.7)	Transport Incidents 675 (112.4)	Self-harm 522 (68.9)	Unintentional Poisoning 432 (60.2)	Unintentional Poisoning 423 (63.2)	Unintentional Poisoning 387 (52.5)	Unintentional Poisoning 249 (41.4)	Environmental/ Natural Factor 250 (81.2)	Transport Incidents 153 (123.0)	Self-harm 3181 (60.7)
4	Fire/Burn 38 (17.0)	Struck by Object 46 (18.6)	Struck by Object 108 (42.8)	Struck by Object 375 (62.4)	Unintentional Poisoning 435 (57.5)	Overexertion 378 (52.7)	Overexertion 327 (48.9)	Self-harm 282 (38.2)	Environmental/ Natural Factor 202 (33.6)	Unintentional Poisoning 137 (44.5)	Suffocation/ Choking 111 (89.2)	Unintentional Poisoning 2554 (48.7)
5	Struck by Object 28 (12.5)	Unintentional Poisoning 40 (16.2)	Unintentional Poisoning 45 (17.8)	Overexertion 284 (47.3)	Overexertion 360 (47.6)	Self-harm 366 (51.0)	Self-harm 300 (44.8)	Overexertion 279 (37.8)	Foreign Object 139 (23.1)	Foreign Object 120 (39.0)	Foreign Object 72 (57.9)	Overexertion 1920 (36.6)
6	Environmental/ Natural Factor 21 (9.4)	Cutting/Piercing 26 (10.5)	Cutting/Piercing 40 (15.8)	Unintentional Poisoning 232 (38.6)	Struck by Object 314 (41.5)	Assault 302 (42.1)	Struck by Object 199 (29.7)	Struck by Object 189 (25.6)	Self-harm 136 (22.6)	Suffocation/ Choking 112 (36.4)	Unintentional Poisoning 71 (57.1)	Struck by Object 1771 (33.8)
7	Suffocation/ Choking 20 (8.9)	Environmental/ Natural Factor 17 (6.9)	Overexertion 38 (15.0)	Assault 170 (28.3)	Assault 311 (41.1)	Struck by Object 257 (35.8)	Assault 191 (28.5)	Cutting/Piercing 155 (21.0)	Overexertion 128 (21.3)	Struck by Object 71 (23.1)	Struck by Object 63 (50.6)	Environmental/ Natural Factor 1288 (24.6)
8	Cutting/ Piercing* 14 (6.2)	Fire/Burn 10 (4.1)	Foreign Object 33 (13.1)	Cutting/Piercing 155 (25.8)	Cutting/Piercing 224 (29.6)	Cutting/Piercing 219 (30.5)	Cutting/Piercing 189 (28.2)	Environmental/ Natural Factor 151 (20.5)	Suffocation/ Choking 127 (21.1)	Overexertion 69 (22.4)	Overexertion 50 (40.2)	Assault 1247 (23.8)
9	Transport Incidents* 14 (6.2)		Assault 13 (5.1)	Foreign Object 57 (9.5)	Foreign Object 88 (11.6)	Environmental/ Natural Factor 121 (16.9)	Environmental/ Natural Factor 114 (17.0)	Assault 147 (19.9)	Struck by Object 121 (20.1)	Self-harm 51 (16.6)	Self-harm 36 (28.9)	Cutting/Piercing 1165 (22.2)
10	Assault 7 (3.1)		Environmental/ Natural Factor 11 (4.4)	Environmental/ Natural Factor 39 (6.5)	Environmental/ Natural Factor 71 (9.4)	Foreign Object 84 (11.7)	Foreign Object 94 (14.0)	Foreign Object 132 (17.9)	Cutting/Piercing 95 (15.8)	Cutting/Piercing 39 (12.7)	Fire/Burn 15 (12.1)	Foreign Object 976 (18.6)
All Causes	551 (245.8)	744 (301.5)	1095 (433.6)	4050 (674.2)	4665 (616.2)	4475 (623.5)	4614 (689.4)	6258 (848.6)	6821 (1133.2)	7313 (2375.5)	8519 (6847.5)	49105 (937.1)

Cases with small numbers are not depicted in this table. Unspecified, undetermined and other specified injuries are not shown in the table. Counts are based on all hospital separations. Additional data can be obtained from <https://data.injuryresearch.bc.ca/DataTools/hospitalization.aspx>

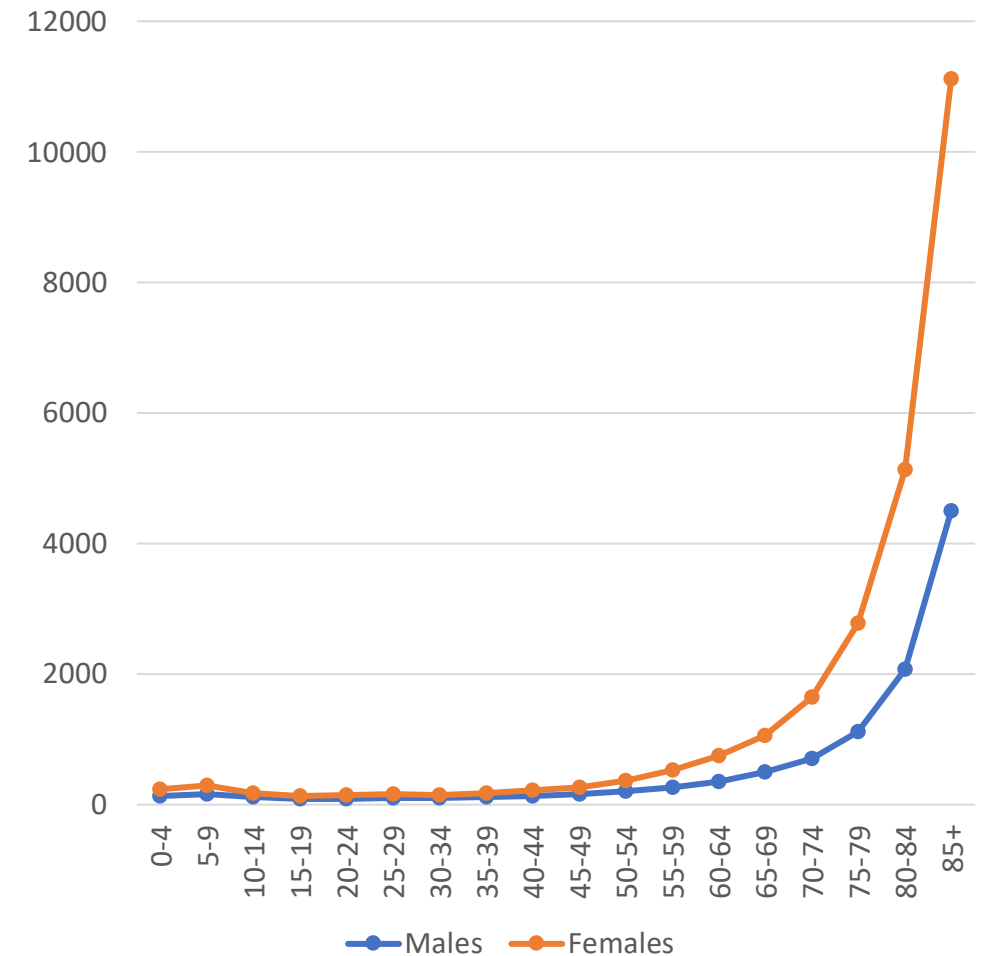
* These two causes have the same ranking.

Data Source: Discharge Abstract Database, BC Ministry of Health, 2023. Population data from BC Stats.

Fall-related hospitalizations

- Fall-related hospitalizations increase with age and are highest among females aged 80+
- More than 50% of fall-related injury hospitalizations occurring among people age 50+ are due to falls on the same level, indicating frailty
- Most fall-related injuries requiring hospitalization occur at home

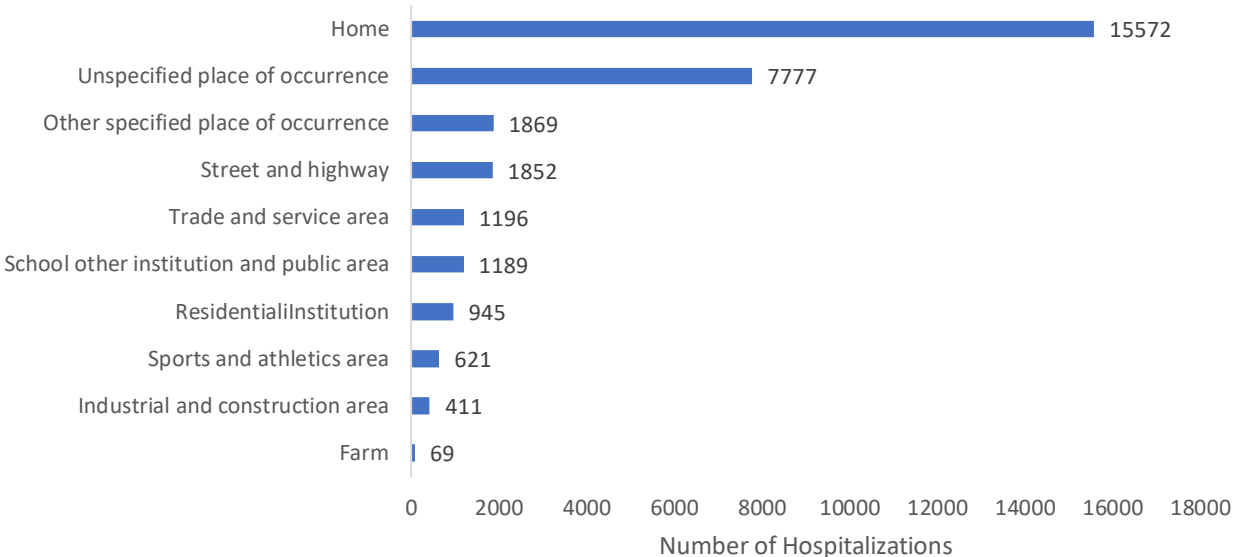
Age-specific average annual rate per 100,000, BC, 2015/16 – 2019/20



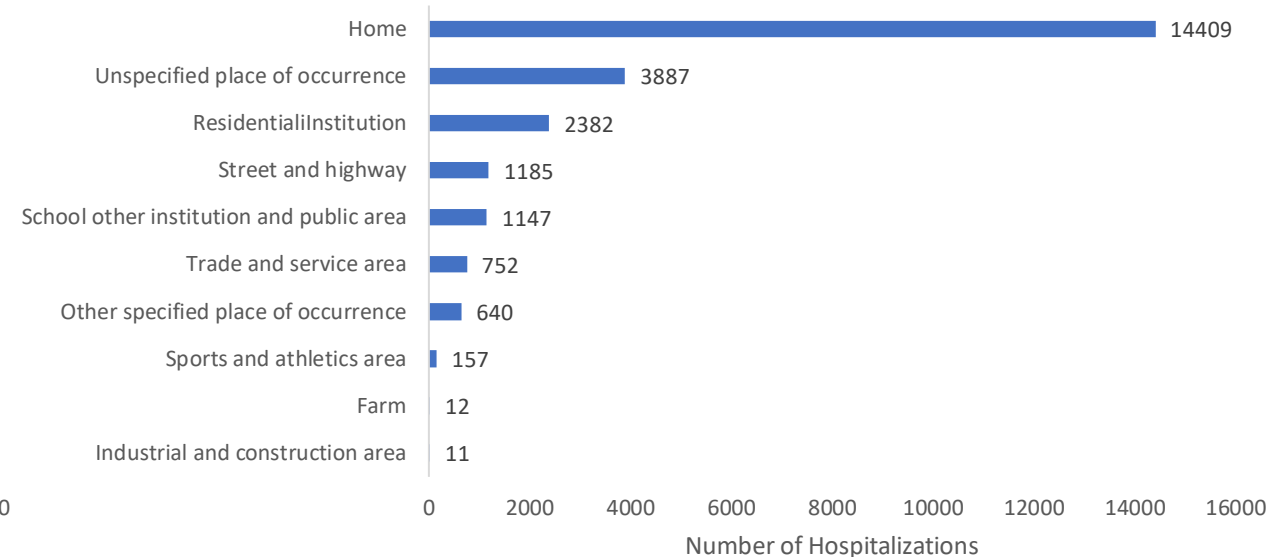
Fall-Related Hospitalizations by Place of Occurrence (50+)

- Most fall-related injuries resulting in hospitalizations occur at home for both age groups

Fall-Related Hospitalizations by Place of Occurrence (50-74 age groups)



Fall-Related Hospitalizations by Place of Occurrence (75+ age groups)



Overview

Fall-related injuries:

- Fall-related hospitalizations increase with **age** and are highest among females aged 80+
- More than 50% of fall-related injury hospitalizations occurring among people age 50+ are due to falls on the same level, indicating **frailty**
- Most fall-related injuries requiring hospitalization **occur at home**
- The burden of fall-related injuries disproportionately impacts equity-deserving populations
- Approximately 17% of new residents admitted to long term care in B.C. had a fall-related hospitalization in the year previous

Fall-related fatalities:

- Increase with **age** and are highest among males aged 80+
- For people aged 50-74, **intracranial injuries** are the most common type of injury that results in a fall-related fatality
- For people aged 75+, **fractures** are the most common type of injury that initiates a causal chain of events resulting in a fall-related fatality

Falls and fall-related injuries and deaths are not an inevitable part of aging: falls are predictable and preventable, even among those at highest risk.

Dr. Hetesh Ranchod –

Clinical Instructor, Division of Geriatric Medicine, Providence Health Care

Screening Resources



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FALLS: PREDICTABLE AND PREVENTABLE

Screening for falls risk can determine whether a person is

not at risk, or is at risk of falling

and assessment of risk can inform the

development of fall prevention strategies

for BOTH groups.



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FALLS: PREDICTABLE

When to screen:

- Universal **annual falls screen** for community dwelling adults, 65 years of age or older
- 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 environment (hospitalisation, relocation)

Recommend screening by either of 2 quick techniques:

- Interview individual,
OR
- Individual fills in a form: The Staying Independent Checklist



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FALLS: PREDICTABLE

A: INTERVIEW SCREEN QUESTIONS FOR ASSESSING FALLS RISK

Ask the following 3 questions:

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 one** of the three questions, the individual is at risk of falling and **needs further review**.



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FALLS: PREDICTABLE

B. PATIENT COMPLETES THE **STAYING INDEPENDENT CHECKLIST**

- The form is completed by the individual
- Answers YES or NO to 12 statements
- The form is available in magazines, community centres, medical offices, online (BCGuidelines.ca, Pathwaysbc.ca), etc



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FALLS: PREDICTABLE:

The Staying Independent Checklist : 12 Questions

Please Circle "Yes" or "No" for each statement below

Check your risk of falling		Actions to Staying Independent	
Yes (2)	No (0)	I have fallen in the last 6 months*	Learn more on how to reduce your fall risk, as people who have fallen are more likely to fall again.
Yes (2)	No (0)	I use or have been advised to use a cane or walker to get around safely.	Talk with a physiotherapist about the most appropriate walking aid for your needs.
Yes (1)	No (0)	Sometimes, I feel unsteady when I am walking.	Exercise to build up your strength and improve your balance, as this is shown to reduce the risk for falls.
Yes (1)	No (0)	I steady myself by holding onto furniture when walking at home.	Incorporate daily balance exercises and reduce home hazards that might cause a trip or slip.
Yes (1)	No (0)	I am worried about falling.	Knowing how to prevent a fall can reduce fear and promote active living.
Yes (1)	No (0)	I need to push with my hands to stand up from a chair.	Strengthening your muscles can reduce your risk of falling and being injured.



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FALLS: PREDICTABLE:

The Staying Independent Checklist : 12 Questions -14points

Yes (1)	No (0)	I have some trouble stepping up onto a curb.	Daily exercise can help improve your strength and balance.
Yes (1)	No (0)	I often have to rush to the toilet.	Talk with your doctor or incontinence specialist about solutions to decrease the need to rush to the toilet.
Yes (1)	No (0)	I have lost some feeling in my feet.	Talk with your doctor or podiatrist, as numbness in the feet can cause stumbles and falls.
Yes (1)	No (0)	I take medicine that sometime makes me feel light-headed or more tired than usual.	Talk with your doctor or pharmacist about medication side effects that may increase the risk of falls.
Yes (1)	No (0)	I take medicine to help me sleep or improve my mood.	Talk with your doctor or pharmacist about safer alternatives for a good night's sleep.
Yes (1)	No (0)	I often feel sad or depressed.	Talk with your doctor about symptoms of depression and help with finding positive solutions.

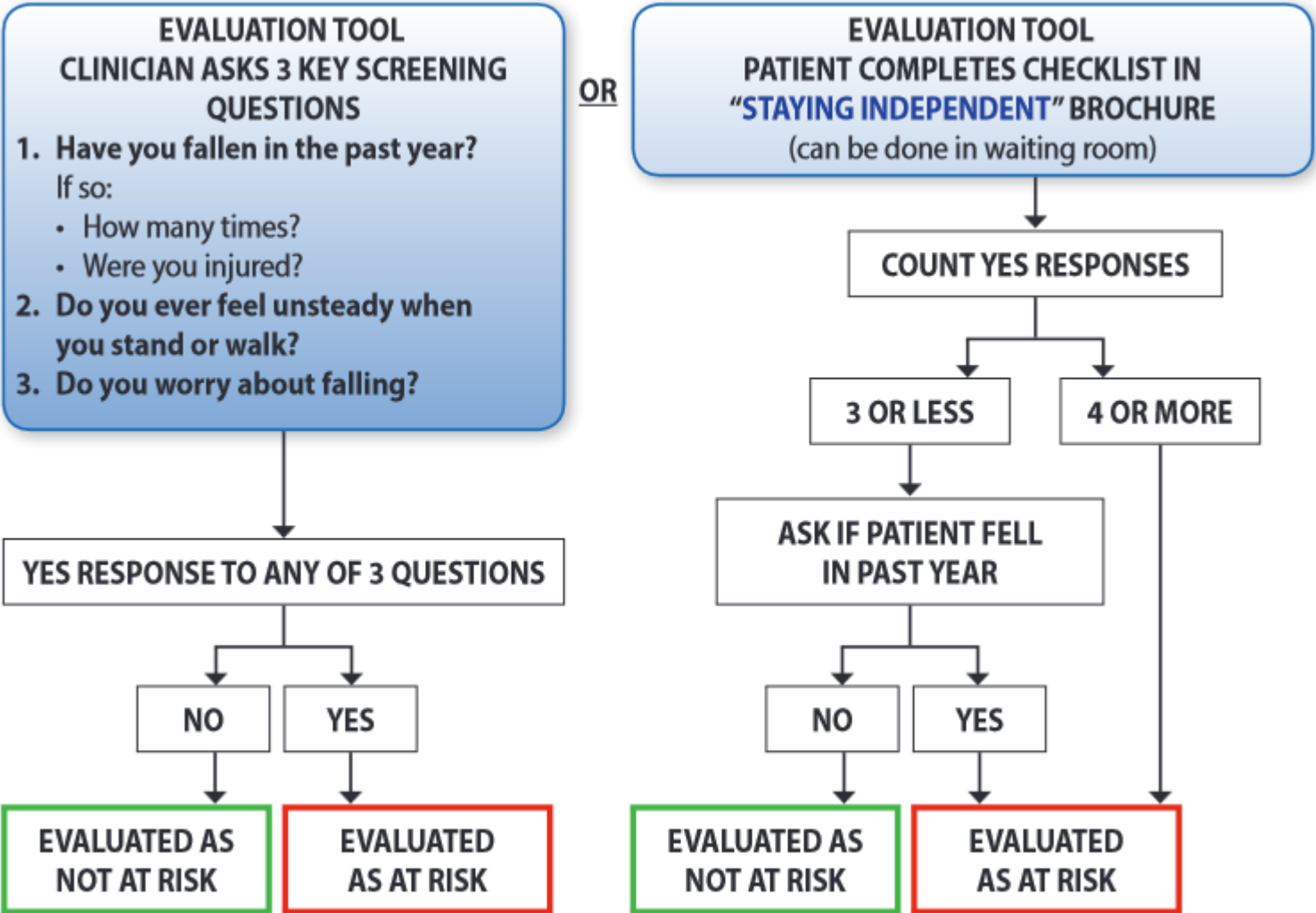
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0 1 2 3

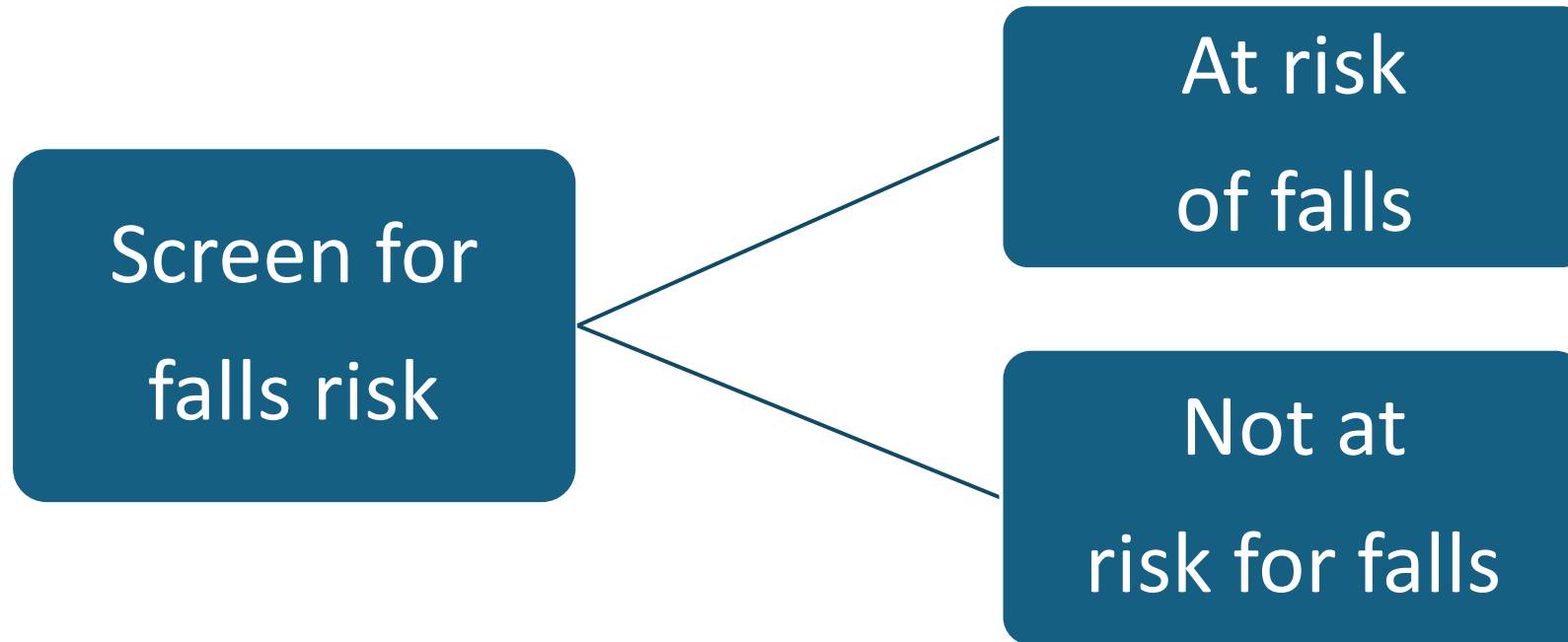
- **Add up the number of points in parentheses for each “yes” response.**
- If you scored 3 or less and HAVE NOT fallen, you are at low risk of falling.
- *If you scored 3 or less and HAVE fallen in the **last year**, you may be at risk of falling.*
- If you scored 4 points or more, you may be at risk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

Screen annually for community dwelling adults, 65 years of age or older

Reassess for fall risk if there is a significant change in the patient's health



FALLS: PREDICTABLE



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FALLS: PREVENTABLE

Falling is an indicator of a **complex system failure**.

CLINICAL IMPLICATION

Fall risk review requires
multifactorial assessment and intervention.



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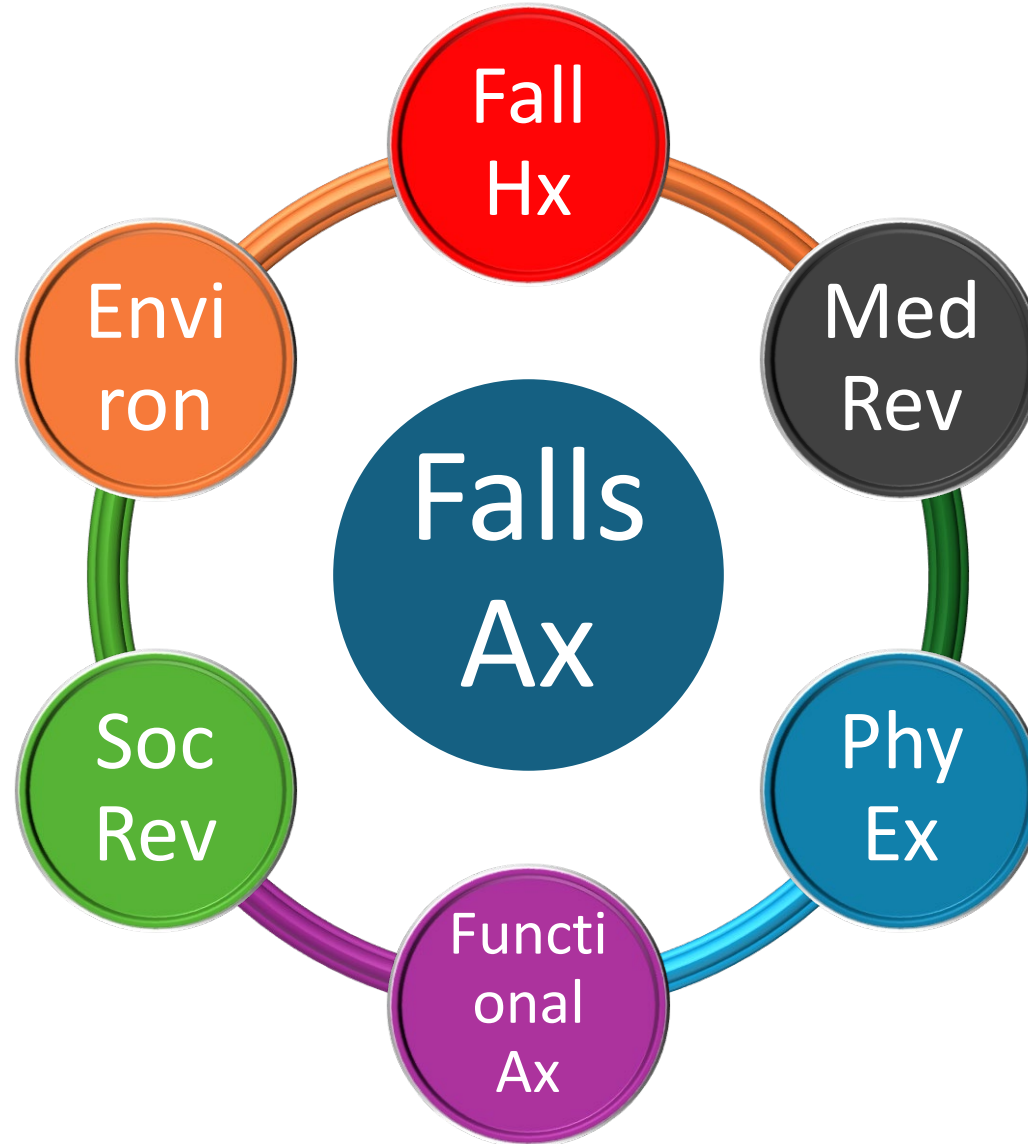
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FALLS: PREDICTABLE AND PREVENTABLE



**FALL PREVENTION ASSESSMENTS
ARE MULTIFACTORIAL**

Patient
Evaluated
as at Risk
of Fall



Multifactorial
Risk
Assessment

Patient Evaluated as at Risk: Multifactorial Risk Assessment

History

1. Fall history

Functional review

2. Physical activity and endurance
3. Limitations in activities of daily living
4. Use of adaptive and safety equipment

Medical review

5. Co-morbidities and risk factors
6. Medication review
7. Nutrition and hydration
8. Continence/rushing to the bathroom
9. Vitamin D intake

Social and environmental review

10. Substance use
11. Environmental and home hazards
12. Living alone and social isolation

Physical exam

13. Mobility
14. Feet and Footwear
15. Visual acuity
16. Orthostatic/postural hypotension
17. Other system examination

Patient Evaluated as at Risk: Multifactorial Risk Assessment

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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.



FALLS: PREDICTABLE AND PREVENTABLE

Implementation of the Stopping Elderly Accidents, Deaths, and Injuries Initiative in Primary Care: An Outcome Evaluation

Gerontologist, 2019, Vol. 59, No. 6, 1182–1191

This study demonstrated that implementation of STEADI fall risk screening and prevention strategies among older adults in the primary care setting can :

1. reduce fall injuries among their patients
2. reduce fall-related hospitalizations and
3. may lower associated health care expenditures.



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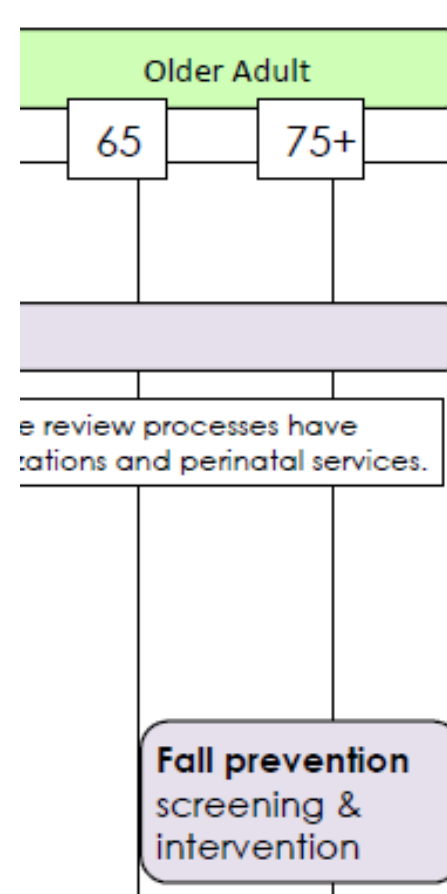
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FALLS: PREDICTABLE AND PREVENTABLE

Lifetime Prevention Schedule Practice Guide 2023

The LPS reports show priorities for these services in B.C. based on each service's

1. clinical effectiveness,
2. population health impact and
3. cost effectiveness.



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Dr. Ruchika Shukla–

Clinical Assistant Professor, Department of Family Practice, UBC

Implementing STEADI



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Dr. Rebekah Eatmon

Family Physician at Lu'ma Medical and Carrier Sekani Family Services;
Indigenous Physician Lead, BC College of Family Physician; Indigenous
Educator, Royal College of Physicians and Surgeons

Indigenous and Rural Perspective



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Challenges

- Lack of resources
- Lack of Specialist care



Involving Family and Community



Ronda Field

FHA Falls & Injury Prevention, Seniors & Complex Care, Fraser Health

Practical Strategies

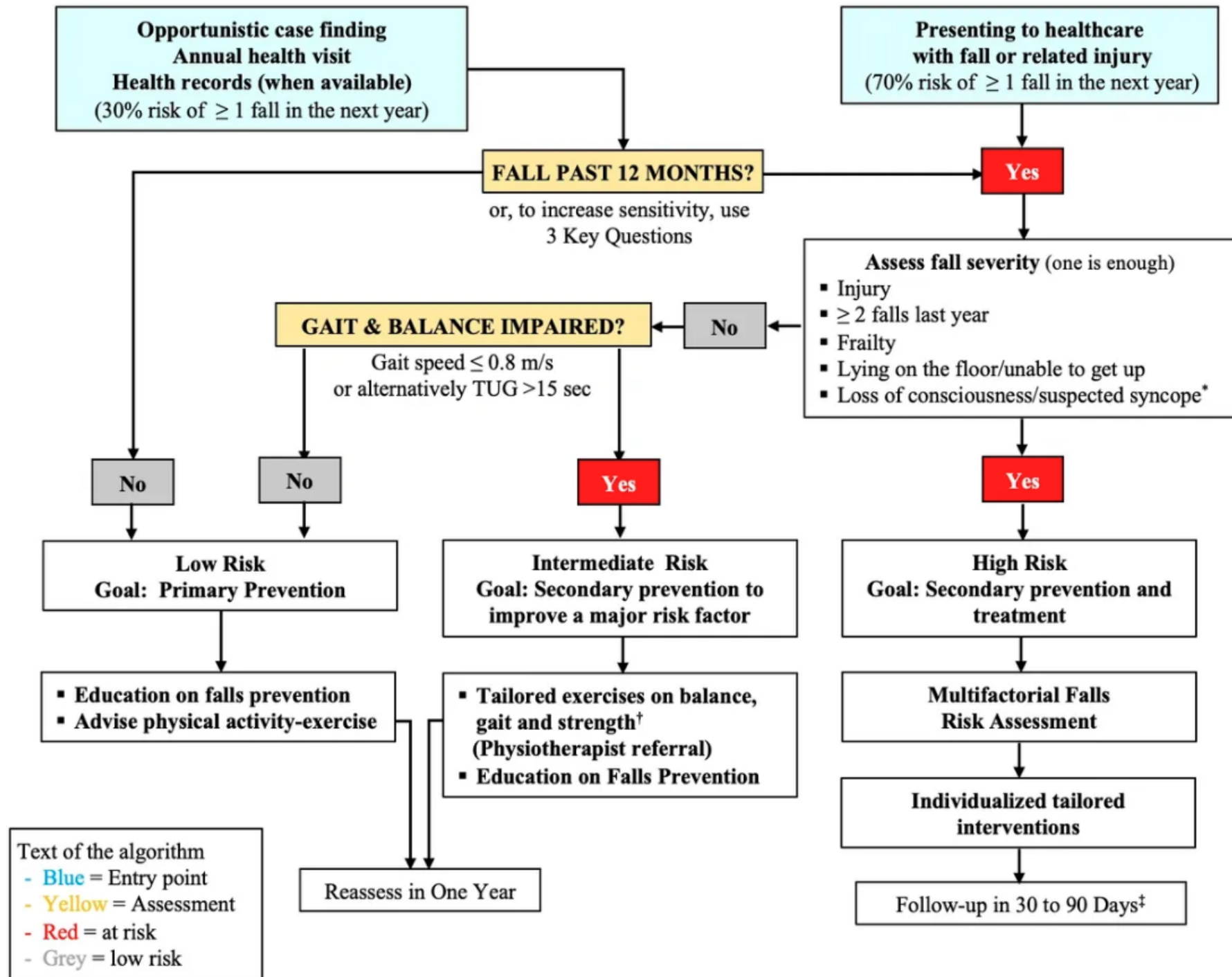


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World Falls Guidelines: Algorithm for Community Dwelling Older Adults



Practical strategies for fall prevention

Quick Assessment

- Have staff **give out checklist** (and a pen) upon arrival or **ask 3 Key Questions!**
 - Falls in past year? How many?*
 - Unsteady when standing or walking?*
 - Concerned about falling?*
- **Watch client walk** into exam room and sit down
 - *Are they unsteady? Using support? Uncontrolled sit?*
- Check **Postural Blood Pressure**

STAYING INDEPENDENT

Falls are the main reason why older adults lose their independence.

Are you at risk?



Practical strategies for fall prevention

Determine Risk









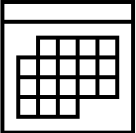
- If visit is due to fall related injury- **HIGH RISK!**
- Other **High-Risk** indicators:
 - 2+ falls
 - Frailty
 - Unable to get up
 - Loss of consciousness
- Staying Independent **Checklist score >4, = ↑ risk**
- Consider **dedicated time** to discuss results
- **Reassure and Empower!** Falls are Preventable → Work

Please Circle "Yes" or "No" for each statement below.

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

Practical strategies for practitioners

KISS - Keep Interventions Simple and Safe!

- Figure out what is important to client 
- Link to goals (independence, mobility, family, etc.) 
- Encourage balance and strength activities 
- Provide some options 
- Practice 1-2 'homework' activities (e.g., slow sitting + balance) 
- Set a 'check-in' date to review progress 

Conversation Tools

- Reflective Listening, Motivational Interviewing, Brief Action Planning 

Practical strategies for clients

SMART goals (Specific, Measurable, Achievable, Realistic, Timely)

- Build activities into daily routine
 - **Slow sit** every time you sit for a meal
 - **Balance** while brushing teeth
 - **Activities** while waiting for toaster/ kettle
- Needs to be *Challenging* but **Safe!**
- Connect with a friend
- Keep track of progress



Anything is better than Nothing!

Extra education resources

- [Finding Balance BC](#)

- **Exercise videos** (*coming soon*)

- **Handouts**

- **Resource Links**

- Health Authority Patient Education sites

- [Osteoporosis Canada videos](#), **Too Fit to Fall or Fracture** handout

- [FallsLoop](#) national CoP (message boards, archived webinars)



Too Fit to Fall or Fracture

Strength Training

At least 2 days/week

- ▶ Exercises for legs, arms, chest, shoulders, back
- ▶ Use body weight against gravity, bands, or weights*
- ▶ 8 - 12 repetitions per exercise

Try these to get started:

- Classes at YMCA/community centre
- Consult a physical therapist/kinesiologist
- Contact Osteoporosis Canada



Balance Exercises

Every day

- ▶ Tai Chi, dancing, walking on your toes or heels
- ▶ Have a sturdy chair, counter, or wall nearby, and try (from easier to harder): shift weight from heels to toes while standing, stand heel to toe, stand on one foot, walk on a pretend line



Posture Awareness

Every day

- ▶ Gently tuck your chin in and draw your chest up slightly
- ▶ Imagine your collarbones are wings - spread your wings slightly without pulling your shoulders back



Aerobic Physical Activity

At least 150 mins/week

- ▶ Bouts of 10 mins or more, moderate to vigorous intensity*
- ▶ You should feel like your heart is beating faster and you are breathing harder
- ▶ You might be able to talk while doing it, but not sing

Examples:

- Brisk walking
- Dancing
- Jogging
- Aerobics class

*If you have a spine fracture, consult a physical therapist/kinesiologist before using weights, and choose moderate, not vigorous aerobic physical activity

Questions? Want a free physical activity booklet? Contact Osteoporosis Canada: English 1 800 463 6842 / French 1 800 977 1778 or www.osteoporosis.ca

Locate a Bone Fit™ trained instructor: English 1 800 463 6842 / French 1 800 977 1778 or www.bonefit.ca



Alternate resources - for extra support

- BCPhysio.org: Find a Physio & CAOT.ca: Find OT
- Health Authority resources (Fall Prevention Clinic, Outpatient or HH PT/OT)
- BCRPA [Fitness Registry](#): Registered Fitness Professionals
- Healthlink **8-1-1**: Qualified Exercise Professionals (9am-5pm M-F)
- Self Management BC: free [Health Coach Program](#) (telephone)
- [Choose to Move](#): free activity coaching (online or in-person)




PHYSIOTHERAPY
ASSOCIATION OF
BRITISH COLUMBIA



Self-Management
British Columbia

Choose
to **Move**

Alternate resources - self motivated clients

- Local Community centers (strength and balance classes)
- Call **2-1-1** (www.bc.211.ca). to find local options 
- Specific Group Exercise Programs (e.g., [Stroke Recovery](#), [Parkinson's](#), [Minds in Motion](#)) (online or in-person)
- Online video resources (e.g., YouTube videos [Walk At Home](#), [10 minute Balance](#), [Better Strength, Better Balance](#))
- Fitness gaming (e.g. WiiFit, LudoFit, X-box, smart step)

Evidence-based Interventions



Physical activity

Exercise reduces the rate of falls by 23% (pooled rate ratio (RaR) 0.77, 95% confidence interval (CI) 0.71 to 0.83, 64 studies, high certainty evidence). [Cochrane Review, 2019](#)



Medication review

Medication review as a stand-alone intervention was effective in preventing fall-related injuries in community-dwelling older adults (Risk Difference [RD] = -0.06, 95% CI: [-0.11, -0.00], I² = 61%, p = .04). [Ming et al., 2021](#)



Home fall-hazard interventions

Home fall-hazard interventions probably reduce the overall rate of falls by 26% (rate ratio (RaR) 0.74, 95% confidence interval (CI) 0.61 to 0.91). [Cochrane Review, 2023](#)



Screening & Risk Assessment

Clinical assessment by a healthcare provider and multifactorial interventions to address predisposing factors can decrease falls by approximately 25% among those at highest risk. [BC CPG, 2021](#)