

A hand holding a compass over a path. The background is a blurred outdoor scene with a path and trees. The text is overlaid on the image.

Navigating Recovery Safely: Minimizing Risk of Falls Post Stroke

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PRESENTER DISCLOSURE

Presenter(s) Mary Haller and Dana Guest:

Presenters have not received any commercial support and have no conflicts to declare

Objectives

1

Identify stroke-related impairments that heighten vulnerability to falls.

2

Identify recommended screening/assessment tools post stroke and recognize limitations to generalized screening for fall risk in persons living with stroke.

3

Identify appropriate interventions for fall risk management and phased approach for integration.

4

Review educational materials and resources tailored for falls risk management in stroke patients.

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GUIDELINE

World guidelines for falls prevention and management for older adults: a global initiative

Key Messages

- Falls /related injuries are increasingly common especially post stroke
- Many falls can be prevented
- Fall /injury prevention needs multidisciplinary management
- Individualized multidomain interventions are effective for reducing the rate of falls in high-risk individuals i.e post stroke
- In care homes/hospital settings, all older adults should be considered as high risk

Universal Fall Risk Interventions

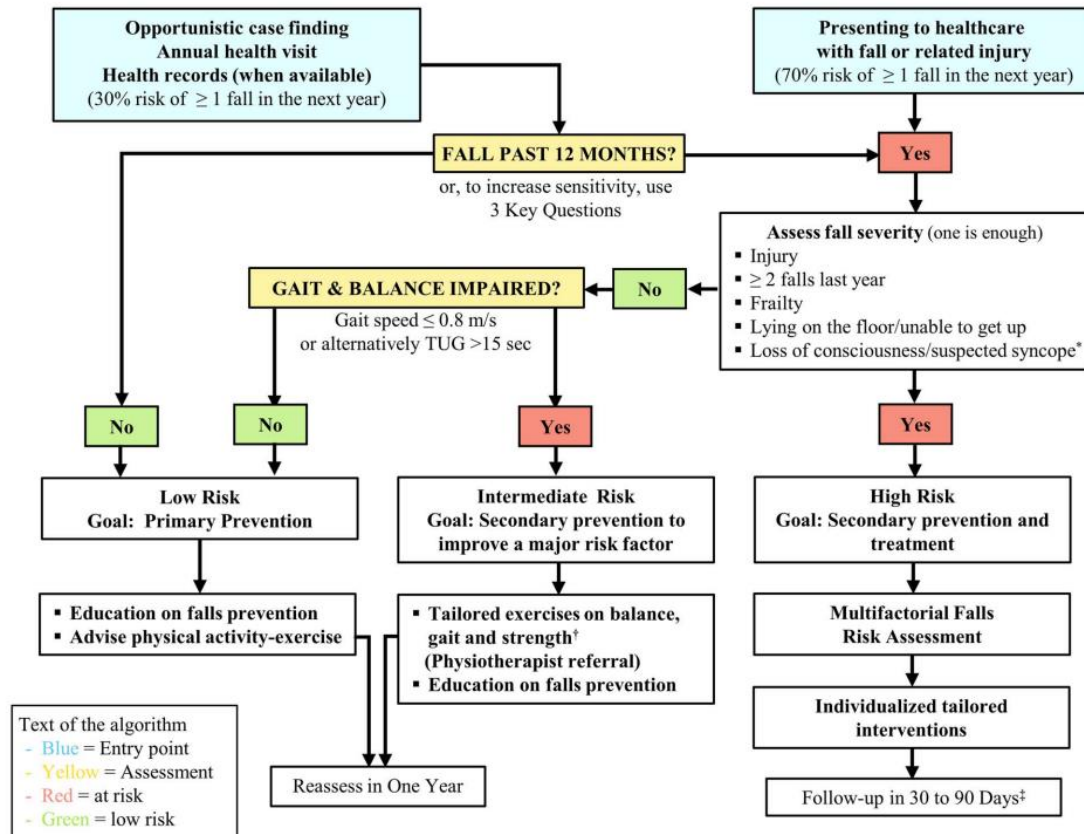
- Ensure mobility aids within reach
- Offer help as needed
- Allow for family to remain with patient as much as possible
- Work to reduce clutter
- Encourage patient to use eyeglasses, hearing aids and walkers/canes
- Erect a caution sign and call housekeeping immediately to clean up a spill

Tips to Avoid Falls in Hospital

Patients can:	Visitors/family can:
 <p>Follow instructions from your care team about how to safely move around.</p>	 <p>Ask the care team for help, so you can safely move your loved one.</p>
 <p>Use your call bell if you feel weak, sleepy or dizzy and need help to get up. Ask for help when getting up at night.</p>	 <p>Tell the care team if your loved one has a special care need.</p>
 <p>Use your walking aid such as a walker or crutches.</p>	 <p>Encourage your loved one to be active within their mobility orders. Try to have them walk, or sit in a chair, three times per day (when able).</p>
 <p>Wear sturdy, non-slip footwear for walking. Don't walk in socks or bare feet.</p>	 <p>Let staff know about spills so they can be wiped up right away.</p>
 <p>Avoid leaning on unsteady furniture or tables with wheels.</p>	 <p>Keep the room tidy and free of clutter to reduce tripping hazards.</p>
 <p>Ask staff and family to keep your walking aid, phone, glasses and call bell close to you.</p>	 <p>Make sure your loved one has their walking aid, phone, glasses and call bell within reach before you leave. Keep the bed in lowest position.</p>
<p>Staff will:</p> <ul style="list-style-type: none"> ✓ ask questions to check your risk for falling. ✓ ask about your pain and check for any changes in your memory. ✓ make sure your call bell is close by. ✓ review your medicines (pills) to see if they increase your risk of falls. ✓ keep your room tidy and free of clutter. ✓ check on you at least every hour and ask if you need help. ✓ help you to get up and move during the day. ✓ keep your bed low to the floor so it's easier for you to get in and out. 	

Algorithm

World guidelines for falls prevention and management for older adults



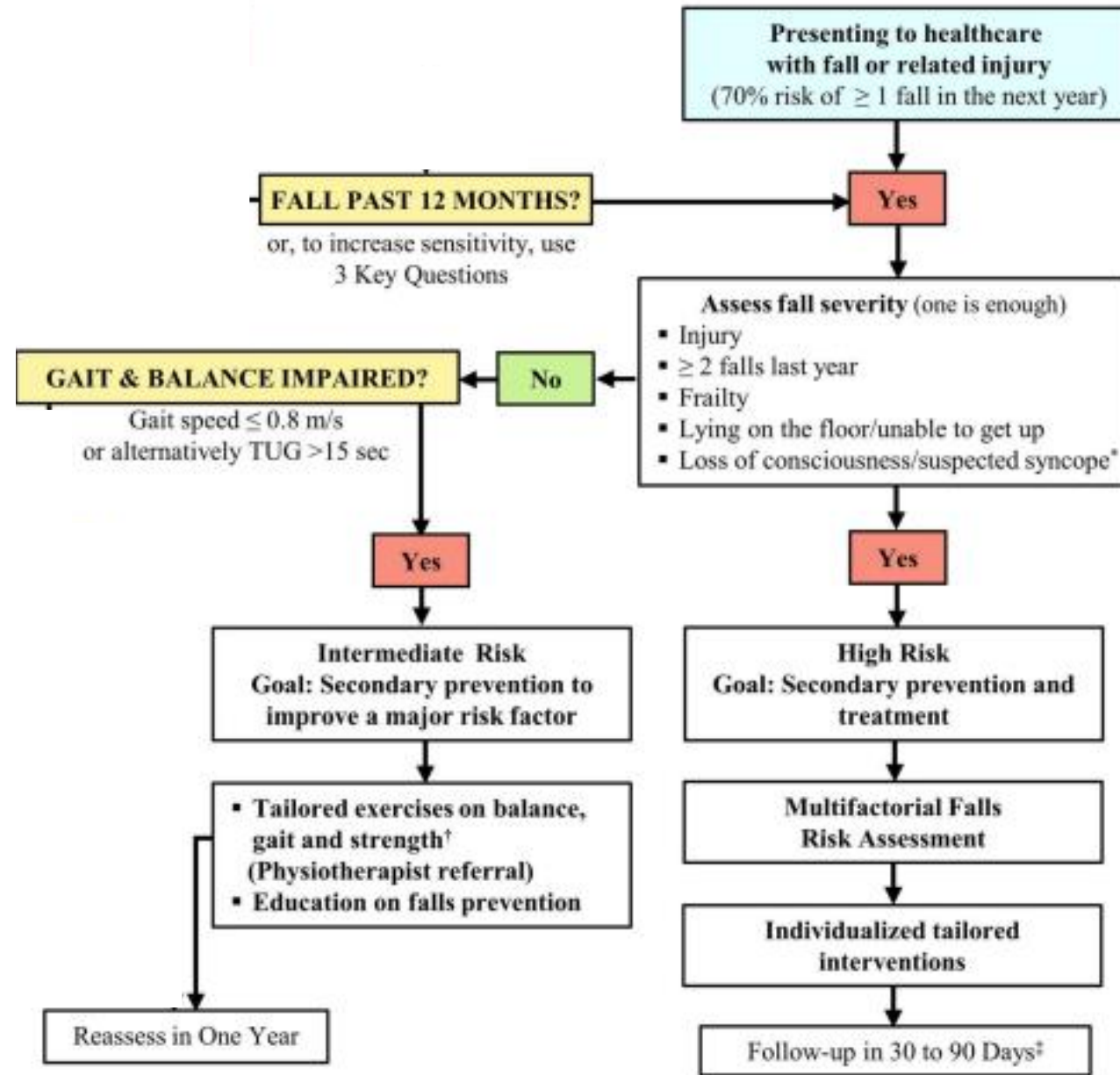
3 Key Questions

1. Have you fallen in the past year?
2. Do you feel unsteady when standing or walking?
3. Do you have worries about falling?

World guidelines for falls prevention and management for older adults

Text of the algorithm

- Blue = Entry point
- Yellow = Assessment
- Red = at risk
- Green = low risk





STROKE CANADA

WHAT is a STROKE?

A **STROKE** is a sudden loss of brain function caused by a sudden brain blood vessel blockage (ischemic stroke) or rupture (hemorrhagic stroke). Ischemic stroke is the most common type of stroke.

Stroke can happen at any age, so **know the signs** and **know what it looks like**.

WHO is AFFECTED?

ABOUT
878,500 CANADIAN ADULTS
AGED 20+ HAVE EXPERIENCED A STROKE 2017-2018¹
OR
 **438,700**  **439,800**


1/4 OF CANADIANS
LIVING WITH STROKE
ARE UNDER AGE 65

STROKE RISK
RISES RAPIDLY
AFTER
AGE **55**


WHAT are the RISKS?

 **HIGH BLOOD PRESSURE IS THE STRONGEST RISK FACTOR FOR A STROKE.**
OTHER RISK FACTORS include smoking, obesity, diabetes, high blood cholesterol, atrial fibrillation (a-fib), a sedentary lifestyle and diet low in fruits and vegetables.

HOW to REDUCE THE RISKS?

 KEEP BLOOD PRESSURE UNDER CONTROL
 BE PHYSICALLY ACTIVE
 EAT A HEALTHY DIET
 QUIT SMOKING



EVERY MINUTE COUNTS
in a **STROKE EMERGENCY!**

Survival and full recovery are possible if one acts... **FAST**

39% OF CANADIANS DID NOT KNOW ANY **FAST SIGNS** OF STROKE²


Learn the signs of stroke

Face is it drooping?
Arms can you raise both?
Speech is it slurred or jumbled?
Time to call 9-1-1 right away.

Act **FAST**. Lifesaving treatment begins the second you call 9-1-1.

SOURCES: ¹ Public Health Agency of Canada, using Canadian Chronic Disease Surveillance System data files contributed by provinces and territories, as of February 2021 (data up to 2017-2018). Data from Nunavut and the Northwest Territories were not available for 2017-2018. ² The Heart and Stroke Foundation Signs of Stroke poll was conducted by Emory Research Group. A total of 1,000 Canadians age 18 and over were surveyed by telephone in December 2020. A survey of this magnitude yields results that are accurate to within plus or minus 1.9 points, 95 times out of 20.

In care homes/hospital settings, all older adults should be considered as high risk


1/4 OF CANADIANS
LIVING WITH STROKE
ARE UNDER AGE 65

75% of our stroke population >65 or older adults

Inpatient Case Study

Bernie 60-year-old gentleman who suffered a left stroke 3 days ago and presents with:

- Weakness in his right arm and leg
- Vision changes - hemianopia/visual field cut
- Decreased sensation
- Impaired coordination
- Apraxia - difficulty planning movements
- Decreased attention and insight
- Difficulty communicating
- Right knee pain, secondary to arthritis but worse in hospital
- Fatigue

Past medical history:

- HTN
- OA

Screening = High Risk

Atlas Screening Tool:

Bernie scores “High Risk” on general facility falls screening tool and fall risk identified in chart

Search (Alt+Comma)	0721	19:51:07	20:10:30	1929	1300
Atlas Fall Risk					
History of fall within the last year?			0	0	
Impaired mobility, balance and/or gait?	10	10	10	10	
Impaired mental status?	0	0	0	0	
Based on your clinical judgment, is the patient at risk for falling?	10	10	10	10	
Atlas Fall Total	20	20	20	20	

Allied health assesses within 48 hours and recommends:

1 person assist to stand with a 4WW to transfer to chair or walk to bathroom to toilet. They note that he is impulsive and attempts to do things without assistance.

Next Steps?

Best Practice Recommendations

Table 2: Suggested Screening/Assessment Tools for Risk of Falling Post Stroke

Assessment Tool	Time to Complete	Items and Scores	Required Equipment
Stroke Assessment of Fall Risk (SAFR) Breisinger et al. 2014	Unknown	<p>7 fall risk-factors comprised of 4 impairment-based measures (impulsivity, hemi-neglect, static, and dynamic sitting balance) and 3 Functional Independence Measures (transfers, problem-solving, and memory) are measured.</p> <p>Total scores range from 0-49 with a higher score indicating a higher risk of falling.</p>	Several commonly available objects.
Predict-FIRST Sherrington et al. 2010	30 minutes for physical component.	<p>Respondents are measured on 5 risk factors including frequent toileting, central nervous system medications, experiencing a fall in the past year, being male, and inability to perform a tandem stance.</p> <p>Respondents are cumulatively scored across the five risk factors to assess the probability of falling. A score of 0=2% chance of falling, 1=4%, 2=9%, 3=18%, 4=33% and 5=52%.</p>	Several commonly available objects.
STRATIFY Oliver et al. 1997	Unknown	<p>Patients are given five questions about the absence (score of 0) or presence (score of 1) of falls risk factors including previous falls, visual impairments, frequent toileting, agitation, and a mobility score of three or four. Mobility scores are obtained by combining the mobility and transfer scores on the Barthel Index.</p> <p>STRATIFY scores are ranged from 0 (low risk) to 5 (high risk).</p>	Several commonly available objects.
Timed Up & Go Test (TUG) Podsiadlo & Richardson 1991	1-2 minutes	<p>The patient begins in a seated position, is asked to stand and walk 3 metres, turn, walk back to their chair sit back down.</p> <p>Patient is timed with difficulties in mobility monitored by instructor. A time of ≥ 15 seconds indicates an increased risk of falling.</p>	Several commonly available objects.
Modified Motor Assessment Scale (M-MAS) Carr et al. 1985	15-35 minutes	<p>8 items pertaining to balance, mobility and motor function, the latter of which measuring upper arm function, walking, sitting to standing, supine to side-lying, supine to sitting, and hand movements.</p> <p>Each item is scored 0 to 6 with a higher score indicating greater difficulty performing the equivalent item task.</p>	Several commonly available objects along with a low plinth.

Interventions



- Identification of patient at risk
- Visual reminders to call for assist
- Environmental set up /
- Frequent rounding
- Regular toileting (Q2hr)
- Education patient/ family on risk of falls
- Communication/ documentation of fall risk and strategies
- Ongoing assessment

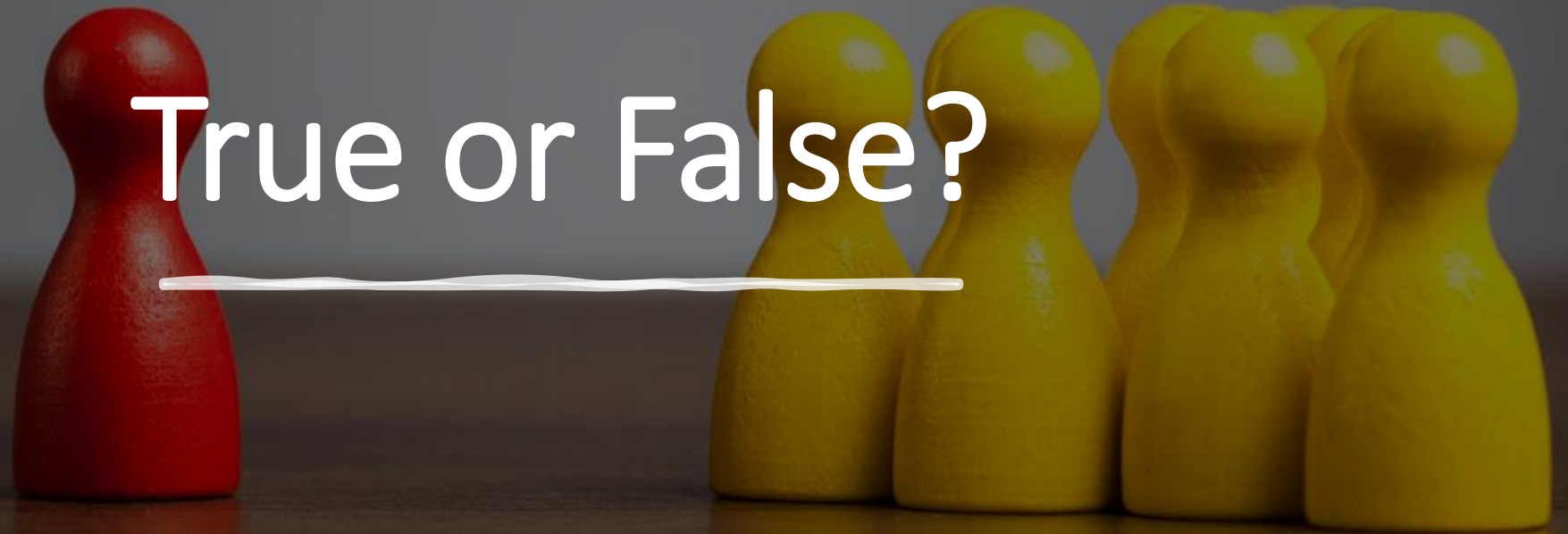
Ongoing Assessment of Risk

Despite targeted interventions and regular reminders when rounding you continue to find Bernie attempting to mobilize independently.

What should you do?

- Determine the motivation for mobilizing
- Encourage family to be more present
- Implement chair and bed alarms
- Posey mat on floor
- Consider use of wheelchair to allow for independent mobility

Myths or Truths



True or False?

Community Case Study

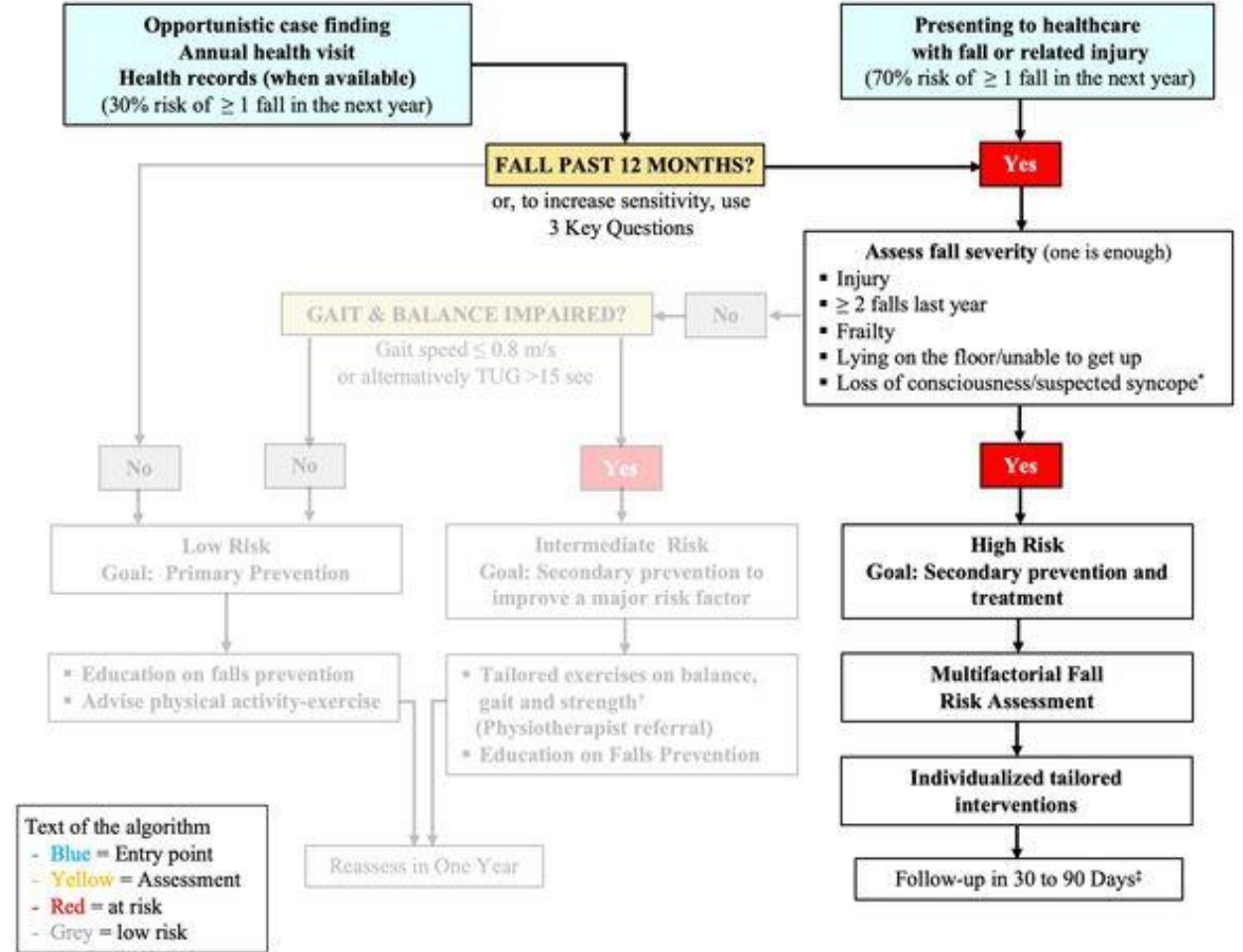
Mr. C: 80-year-old man suffered a mild right CVA and was recently discharged home from acute care with homecare for bathing, and home OT assessment pending.

Patient presents with:

- CVA with mild cognitive changes
- Using walker secondary to right sided weakness and decreased balance
- Osteopenia
- Newly diagnosed afib
- Hypertension
- Smoker
- Dizziness
- Unintentional weight loss, BMI 19.6
- Unknown environmental risks
- Requires bathing assist
- History of falls in the bathroom, exiting home, at night-prior to CVA dx
- Meds- Atenolol, Rivaroxaban , Bisprolol, Plavix, Vitamin D,

Assess fall severity = High Risk

- Injury
- Previous falls
- Frailty
- Lying on the floor/unable to get up
- LOC/suspected syncope



Multi Factorial Assessment:

- Cognition
- Dizziness
- Home environment
- Balance, strength and gait assessments
- Medication
- Footwear

Individualized Tailored Interventions for Mr. C :

High Risk:





- Strength gait and balance program/ Physiotherapy
- Nutritional counselling
- Home OT
- Footwear recommendations
- Monitoring and support for cognitive concerns- family home care , friends and neighbors
- Medication deprescribing as indicated
- Sleep hygiene education and avoidance of medication
- Bone health treatment for injury prevention
- Consider need for a personal alarm

Generalized Interventions:

- Community Exercise
- Physio referral: gait aids, strength and balance
- Environmental adaptations to consider
- Education on fall risk and postural hypotension strategies
- Meds requisition/deprescribing
- Personal alarm

POST-STROKE EXERCISE CLASSES

for older adults

-  No fee
-  Classes accommodate all fitness levels
-  Seated or standing exercise
-  Virtual or in-person options

NEW in-person classes roll out this Fall at the Eastern Ottawa Resource Centre and the South Nepean Community Health Centre

To register or for more information contact Grace:

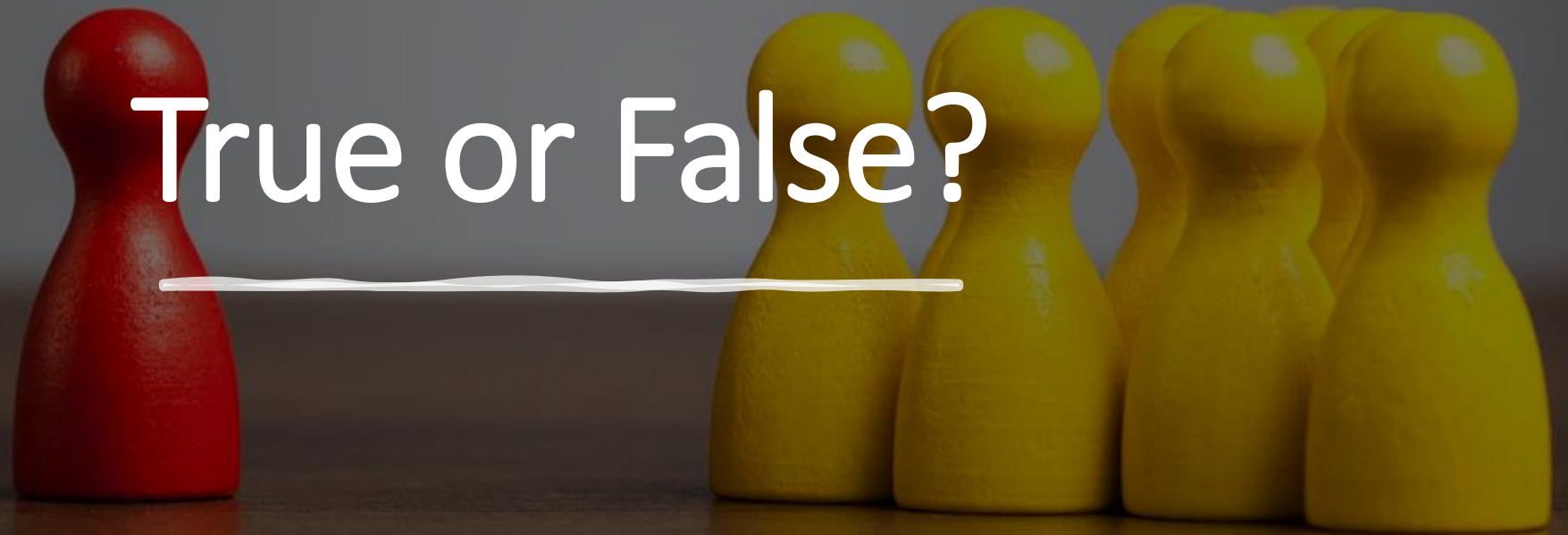
 613-796-4729

 gkowalczyk@familyphysio.com



Classes funded through the senior fitness exercise program,
Ontario Health at Home

Myths or Truths



True or False?

Patient/Caregiver Resources

- Champlain Regional Stroke network infographics: [CRSN](#)
- WHO falls: [WHO falls fact sheet](#)
- The Ottawa Hospital:
 - ✓ Hypotension
 - ✓ Footwear
 - ✓ Reduce falls at home
- Staying independent Checklist: [StayingIndependentChecklist](#)

BALANCE AND FALLS POST STROKE

~40% of all stroke survivors will fall within the first year

Balance is complex and involves many different parts of our bodies working together

POST STROKE YOUR BALANCE MAY BE AFFECTED BY ONE OR MORE OF THE FOLLOWING:

- Loss of feeling/sensation
- Reduced awareness of body position
- Difficulties with coordination
- Medications (prescribed and over the counter)
- Dizziness
- Decreased judgment
- Decreased vision
- Poor attention/concentration
- Fatigue

WHAT YOU CAN DO:

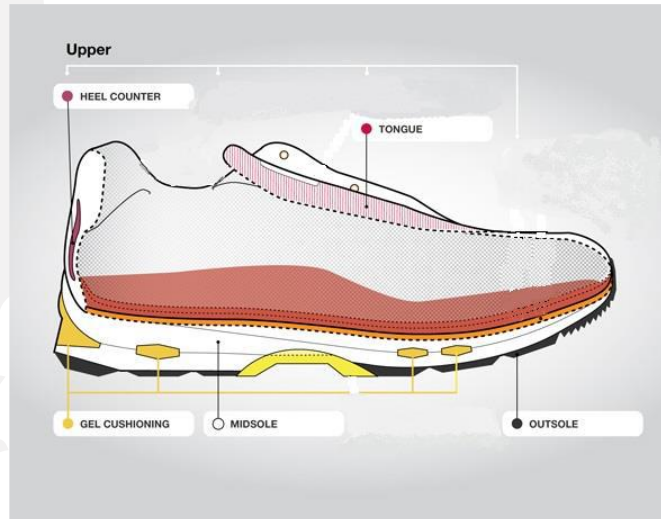
- Know your limits/ ask for help
- Use techniques/ equipment recommended by your health care provider
- Wear non slip low-heeled shoes
- Move slowly
- Remove obstacles/clutter
- Have good lighting
- Focus on what you are doing
- Have your vision tested regularly
- Talk to your pharmacist or doctor about your medications and falls

THINGS TO THINK ABOUT WHEN GOING OUTSIDE THE HOME:

- Plan your activity-prepare appropriately
- Have someone with you the first time
- Try to avoid busy/crowded places
- Start with short trips
- Pace yourself
- Consider the weather
- Bring a mobile phone/personal alarm

EXERCISE EVERY DAY TO IMPROVE AND MAINTAIN YOUR BALANCE AND REDUCE YOUR RISK FOR FALLS! FOR MORE INFORMATION SPEAK WITH YOUR HEALTH CARE PROVIDER.

Regional Stroke Network / Réseau des AVC de la région de Champlain
Patient, 08-2020 www.crsn.ca



How to reduce your fall risk at home

How to reduce your fall risk at home

Tell me about postural hypotension

What is it?
Postural hypotension means your **blood pressure** drops too low when you stand up from sitting or lying down. It is more common as you get older.

People with postural hypotension may feel:

- Dizzy or light-headed
- Faint
- Blurred vision
- Weak
- Unsteady when walking
- Nauseous

These symptoms may be worse right after getting up in the morning, after eating and after certain medications. This may lead to falls and injury.

What causes postural hypotension?

- Not drinking enough water, especially on very hot days, or after heavy sweating.
- Vomiting or diarrhea for a long time.
- Illnesses such as heart disease, diabetes, Parkinson's disease.
- Some types of medication (including over-the-counter medication).
- Bedrest. You may become weak when you've been ill in bed or not active for a long time.
- Drinking alcohol.

What you can do:

Tell	Measure	Review	Drink
 your doctor* if you feel any of the symptoms above.	 your blood pressure (lying and standing) when visiting your doctor.**	 all your medications with your pharmacist or doctor.*	 plenty of fluids** (but avoid or limit alcohol).
Avoid	Stay active	Rise slowly	
 bending down all the way to the floor or standing up quickly.	 every day and make sure to do light exercises such as walking.	 <ol style="list-style-type: none"> Sit first with feet dangling for one minute. Pump your calf muscles by pointing your toes up and down. Hold a stable object when rising from bed or chair to stand. If you feel dizzy or have other symptoms, sit down again. 	

*Doctor or other health-care professional such as nurse or nurse practitioner.
**Discuss the proper amount with your doctor if you've been told to reduce your fluids.
Health Care Professionals: Please go to www.posturalhypotension.ca for additional resources.
PED 09 (11/2019)

Health Care Provider Falls Resources

- [Staying Independent Checklist](#)
- Technology: personal alarms, watches
- ADP: [assistive-devices-program](#)
- Deprescribing: [deprescribing.org/](#)
- Regional Geriatric Program of Eastern Ontario: <https://www.rgpeo.com/>
- Paramedicine program: [Community Paramedicine Programs](#)
- World falls Guidelines: <https://worldfallsguidelines.com/>
- iWalkAssess: [iWalkAssess](#)

Staying Independent

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



Are you at risk? Check each statement that is true for you.

Check your risk of falling	Actions to staying independent
<input type="checkbox"/> (2) 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.
<input type="checkbox"/> (2) 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.
<input type="checkbox"/> (1) 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.
<input type="checkbox"/> (1) 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.
<input type="checkbox"/> (1) I am worried about falling.	Knowing how to prevent a fall can reduce fear and promote active living.
<input type="checkbox"/> (1) 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.
<input type="checkbox"/> (1) I have some trouble stepping up onto a curb.	Daily exercise can help improve your strength and balance.
<input type="checkbox"/> (1) I often have to rush to the toilet.	Talk with your primary healthcare professional or incontinence specialist about solutions to decrease the need to rush to the toilet.
<input type="checkbox"/> (1) I have lost some feeling in my feet.	Talk with your primary healthcare professional or podiatrist, as numbness in the feet can cause stumbles and falls.
<input type="checkbox"/> (1) I take medicine that sometimes makes me feel light-headed or more tired than usual.	
<input type="checkbox"/> (1) I take medicine to help me sleep or relax.	

Features Toolkit Research **iWalkAssess** Funding Contact Get the App

iWalkAssess
The latest evidence-informed approach to walking assessment post-stroke

[Watch the Video](#)

UNIVERSITY OF TORONTO

Key Messages

6.3. Falls Prevention and Management

Patients with strokes are at much higher risk for falls than other Hospitalized patients (14-65% higher risk)

- ✓ All patients should be screened for fall risk by an experienced clinician
- ✓ Those identified as being at risk should undergo a comprehensive interdisciplinary assessment
- ✓ An individualized falls prevention plan should be implemented for each patient.
- ✓ Bed and chair alarms should be provided for patients at high risk for falls according to local fall prevention protocols.
- ✓ If a patient experiences a fall, an assessment of precipitating factors should be completed and fall prevention plan updated



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