

# Fridays at the University

## Preventing Falls in the Elderly

January 2023

**Centre de santé**  
Saint-Boniface



# Faculty/Presenter Disclosure

- Faculty: Melissa Skrabek-Senécal

## Relationships with commercial interests:

- Grants / Research Support: n/a
- Speakers Bureau / Honoraria: Manitoba Athletic Therapists Association / Sport Medicine and Science Council of Manitoba (Direct funder – Sport Manitoba)
- Consulting Fees: n/a
- Advisory Committees: DFM Quality Improvement Advisory Committee- Rady Faculty of Health Sciences- U of M and the Undergrad Academic Advisory Council- Faculty of Kinesiology and Recreational Managements- U of M



# Mitigating Potential Bias

There are no potential biases because the topics that I covered for the previously mentioned associations are not directly related to the presentation and the information that will be shared today.

This copy is provided exclusively for research purposes and private study. Any use of the copy for purposes other than research or private study may require the authorization of the copyright owner of the work in question. Responsibility regarding questions of copyright that may arise in the use of this copy is assumed by the recipient.



## TRADITIONAL TERRITORIES ACKNOWLEDGEMENT



The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Ojib-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation.

We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration.



Centre de santé  
Saint-Boniface



# Brief Introductions

Melissa Skrabek-Sen cal, BKin-AT CAT(C)

- Athletic Therapist and Kinesiologist at Centre de sant  Saint-Boniface
- Lead an interdisciplinary team conducting individualized, multicomponent fall prevention risk assessments and recommendations for community-based individuals
- Developed and implemented a community-based fall prevention exercise program
- Currently working with several organizations to introduce the program to a wider population
- Currently trying to bring back what COVID put on hold....



# Course Objectives

1. Overview of the New World Fall Guidelines
2. Review recommended exercise interventions and physical training for adults at risk of falls to improve their strength and balance
3. Practical application of exercises to share
4. Resource navigation – Review of available resources



# Magnitude of Falls

- Falls are the leading cause of injury deaths, hospitalizations, and permanent/partial disabilities of all types of injuries in Canada. In 2015, Manitoba reported the highest provincial rate of fall-related mortality in Canada. (Parachute 2015)
- Approximately 30% of community-based seniors over 65 will fall at least once a year, and that number increases to 50% in seniors over the age of 80. (National Institute for Health and Care Excellence (NICE), 2013)
- 95% of all hip fractures are directly linked to falls. (Public Health Agency of Canada 2014)



## Magnitude of Falls (continued)

- Falls are the leading cause of injury-related hospitalizations (86%) among older adults residing in the Winnipeg health region. (Winnipeg Regional Health Authority Public Health Surveillance Team. Winnipeg Health Regional Injury Report, 2000-2010. Winnipeg: Winnipeg Regional Health Authority; 2014.)
- As the worldwide population ages, the incidence of falls is expected to increase. They are expected to increase dramatically due in part to the restrictions put in place during the COVID 19 pandemic. Falls are costly to health care systems, and patients who may experience reduced quality of life, increased anxiety and depression, and serious injury or death.





# Can we do anything to help? YES!!

- There are several interventions that have proven to help decrease the rate of which people suffer falls and fall related injuries.
- **Exercise** on its own, as well as with various combinations of falls prevention strategies including: vision test and treatment, environmental checks and changes, clinical quality improvement, multifactorial assessment and treatment, calcium supplementation, as well as vitamin D supplementation can reduce the risk of falls leading to injuries. *Combined exercise and vision assessment and treatment may be most beneficial.*

- Tricco A, Thomas S, Veroniki A, et al. Comparisons of interventions for preventing falls in older adults: A systematic review and meta-analysis JAMA. 2017;318:1687-1699 review of 283 randomized controlled trials



# Finding the Fallers

- Another way to help this population is to try to *Find the Fallers*- Taking a Proactive Approach to falls prevention
- Consider the following - Falls in older adults: The new pandemic in the post COVID-19 era?
- The COVID-19 pandemic has led that most countries impose lockdown or quarantine and mobility restrictions that affect the physical activity levels of older adults, increasing sedentary behavior and physical inactivity .
- Even if the quarantine and restrictions were/are lifted, the access to physical exercise in older adults may be decreased this population due to ongoing fear . Much of them decline participation in physical exercise because they want to avoiding contracting the COVID-19 (fear to close contact with other participants or to touch the material or equipment) OR by the fear on liability on the side of those that supported these programs.
- As consequence, physical health in older people is negatively affected by this pandemic. And it is still on going.....
- We need to find the fallers and help them....How??

Yamada M., Kimura Y., Ishiyama D., Otobe Y., Suzuki M., Koyama S. Effect of the COVID-19 epidemic on physical activity in community-dwelling older adults in japan: a cross-sectional online survey. J Nutr Health Aging. 2020:1–3. doi: 10.1007/s12603-020-1424-2

Goethals L., Barth N., Guyot J., Hupin D., Celarier T., Bongue B. Impact of home quarantine on physical activity among older adults living at home during the COVID-19 pandemic: qualitative interview study. JMIR Aging. 2020;3:e19007. doi: 10.2196/19007.

Sepulveda-Loyola W., Rodriguez-Sanchez I., Perez-Rodriguez P., Ganz F., Torralba R., Oliviera D.V. Impact of social isolation due to COVID-19 on health in older people: Mental and physical effects and recommendations. J Nutr Heal Aging. 2020:1–10.



# Great idea on paper..... but how do we approach this on a day to day basis..

1. The **New** World Falls Guidelines
2. Falls Prevention Screening Clinics
3. Finding and Promoting Community Programmes that are created to address fall prevention



# NEW World Falls Guidelines 2022- A Brief Overview

- Developed by the World Falls Task Force ( including the Canadian Geriatric Society)
- Aims to provide a framework and expert recommendations to healthcare on how to identify and access the risk of falls in older adults (65+ \*\*\*\*) (*helps us find the fallers*)
- Recommend which interventions, alone or in **combination (this is key)** should be offered to older people as part of a person- centred approach to preventing and managing falls
- 



[https://us02web.zoom.us/webinar/register/WN\\_H3NK6qiKRniE\\_dysvzSMgg](https://us02web.zoom.us/webinar/register/WN_H3NK6qiKRniE_dysvzSMgg)

Join us on Jan. 25, 2023 at noon (Eastern) where Dr. Manuel Montero-Odasso, Canadian researcher and first author on the World Guidelines for Falls Prevention and Management for Older Adults, will provide an overview of this newly published global initiative.

The objectives of this webinar are:

1. To review methodology of the creation of the world falls guidelines for management and prevention
2. To present a falls risk stratification based on current evidence
3. To peruse what is new in these guidelines compared with previous guidelines
4. To present key messages and key recommendations



**Presenter:**  
Dr. Manuel Montero-Odasso  
Professor and Faculty Scholar | University of Western Ontario  
Director of the Gait & Brain Lab | Parkwood Institute

## UPCOMING WEBINAR

### World Falls Guidelines

Wednesday, Jan. 25, 2023  
12-1pm ET

Register Today!



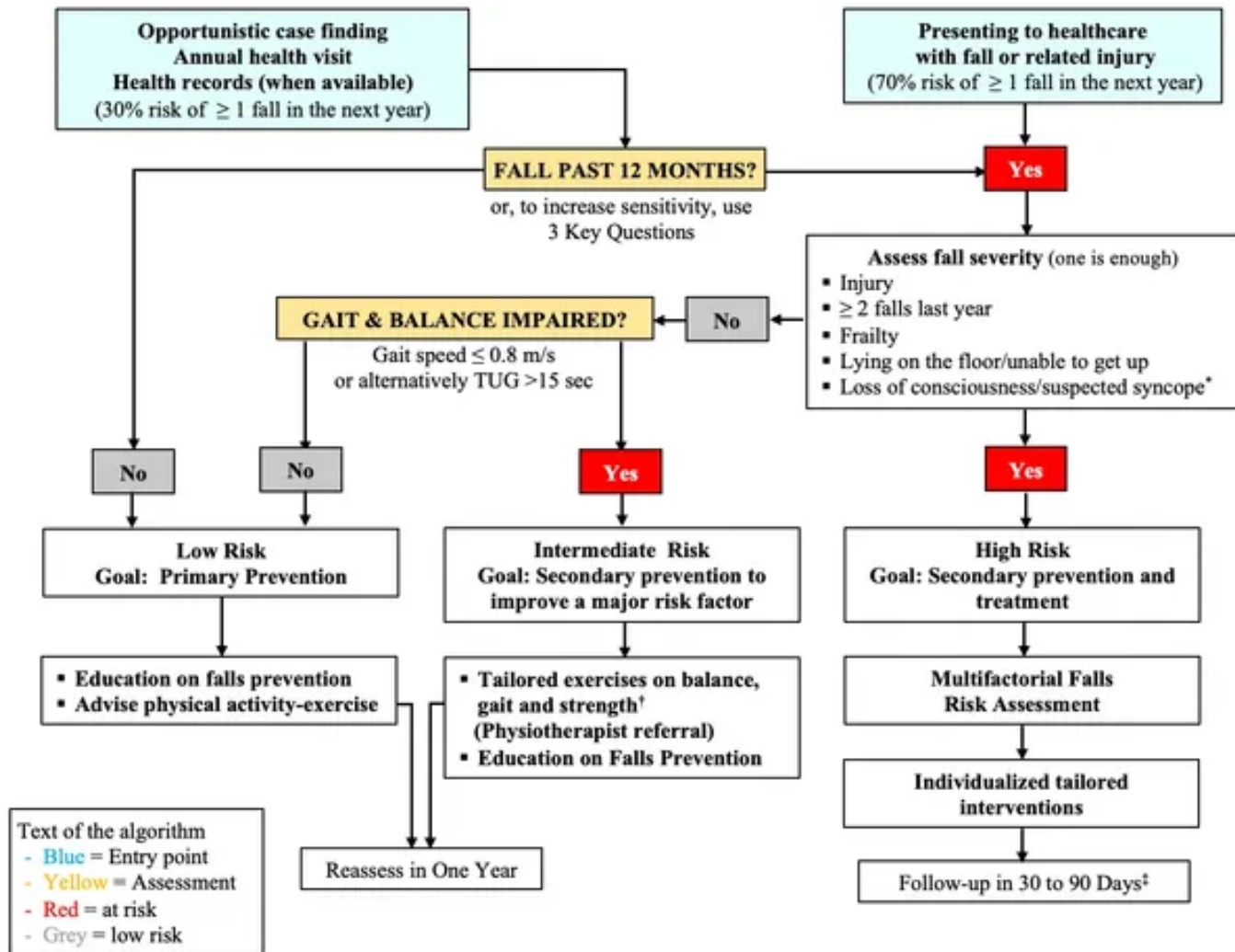
**LCOP** Fall Prevention Community of Practice  
ADULT+JUNIOR

**Centre de santé**  
Saint-Boniface



# Risk Stratification, Assessments and Management for Elderly

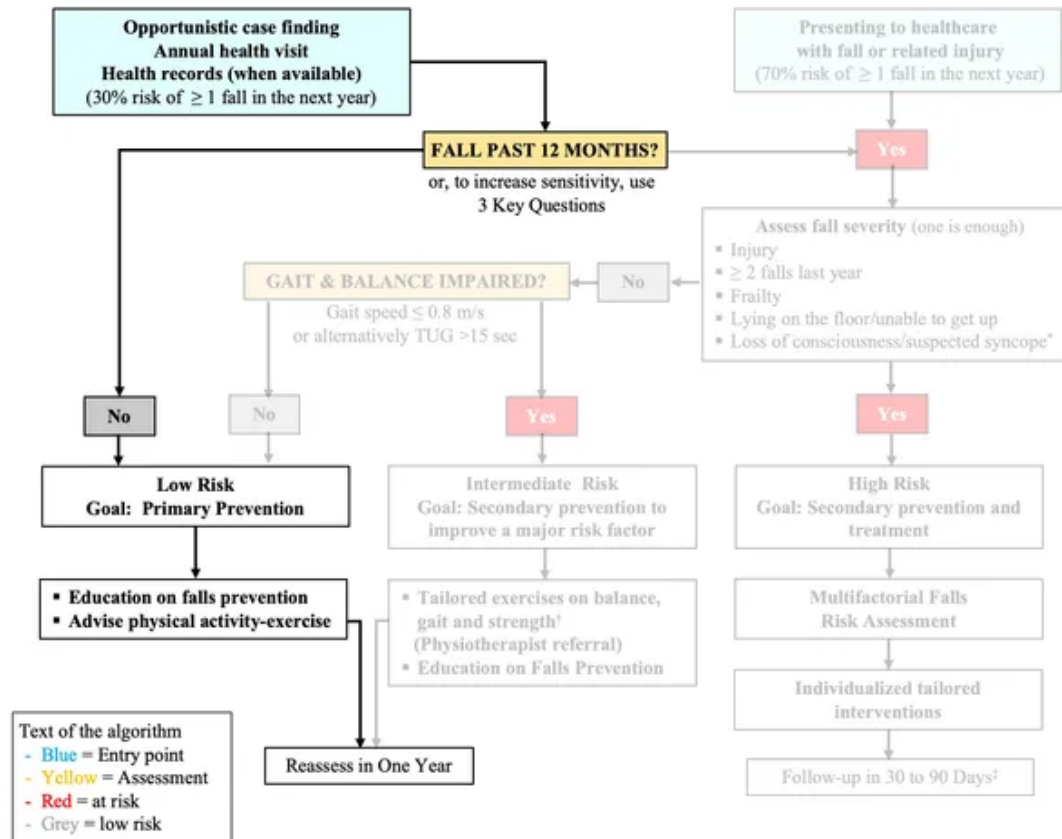
Notes: 3 Key Questions (3KQ) any positive answer to a) Has fallen in the past year? b) Feels unsteady when standing or walking? or c) Worries about falling?



# Low Risk Route

**LOW RISK**  
1/3 who are deemed low risk experience a fall.

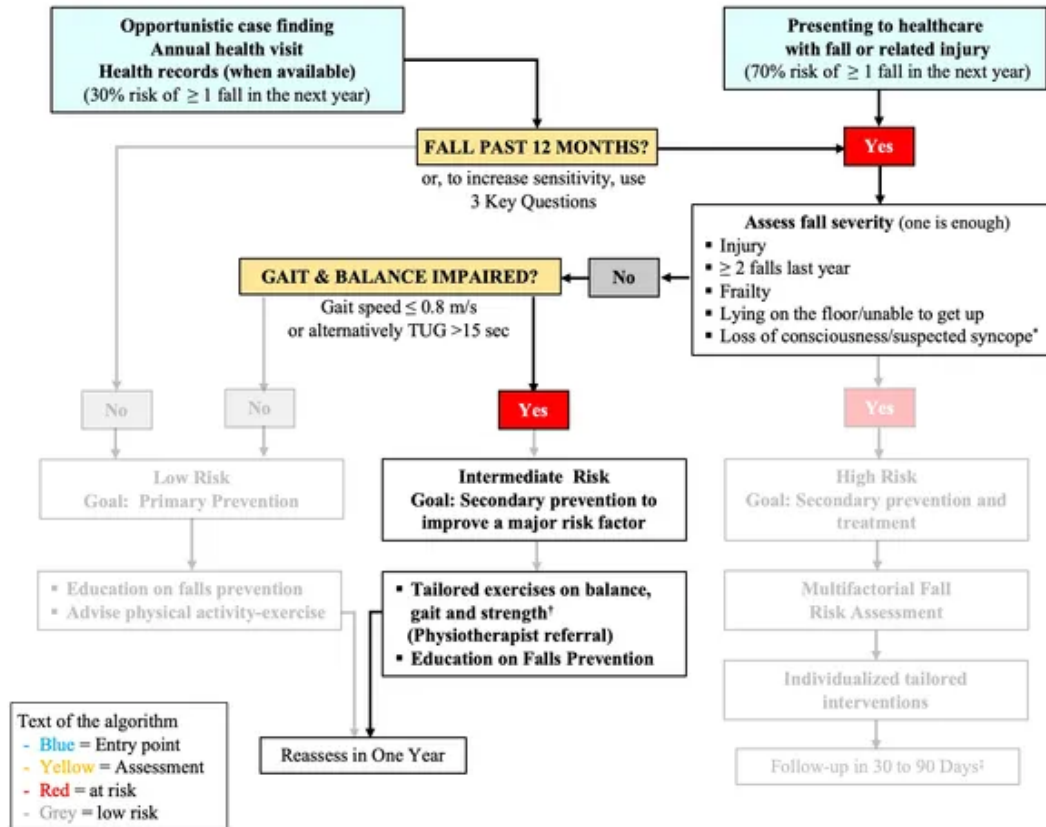
Low risk individuals are offered exercise and education



# Intermediate Risk

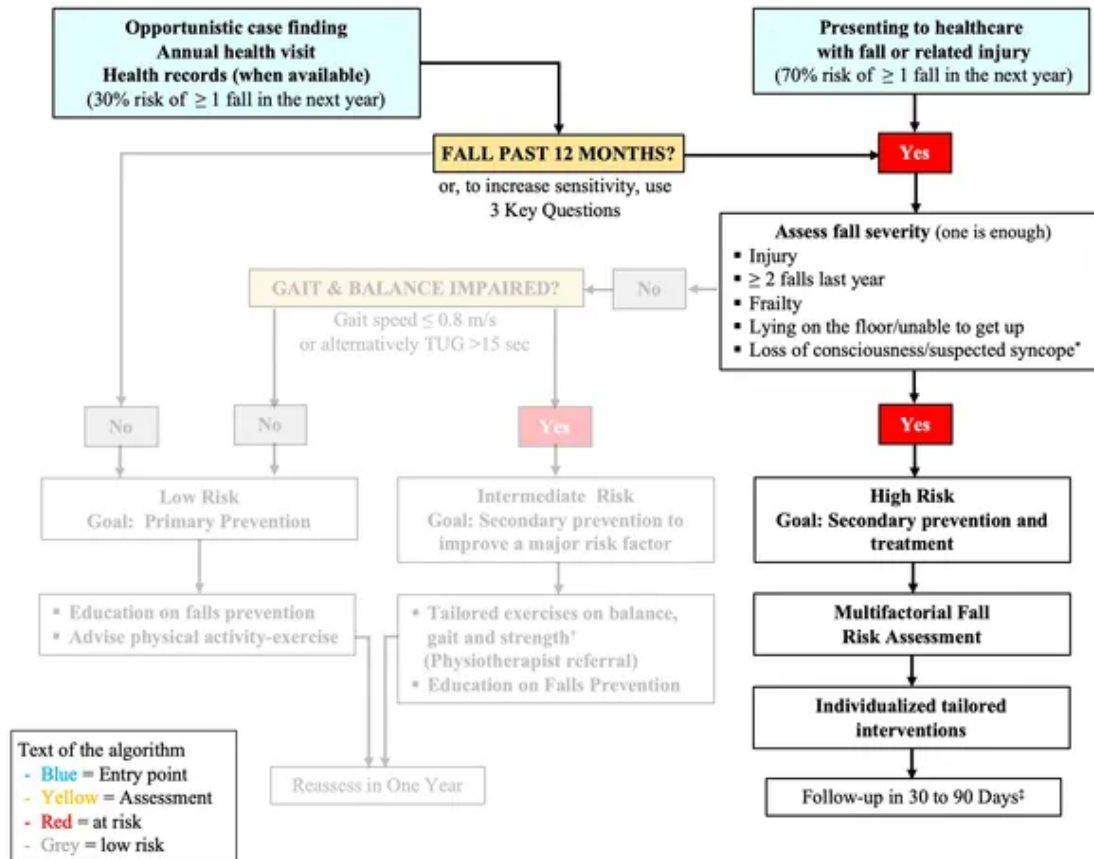
**INTERMEDIATE RISK**  
Individuals who benefit for tailored exercise or physiotherapist/athletic therapy referral.

No frail, no recurrent falls.





# High Risk



HIGH RISK  
Offer Comprehensive Geriatric Assessment, Fall Prevention Screening Clinics, **Multi-domain** interventions.

Close follow-up for high risk of injury or recurrence



# Falls Risk Algorithm Summary

- Older adults at low risk of falls
  - Offer falls education and exercises for general health and/or falls prevention if interested
- Older adults with intermediate risk of falls
  - in addition to above, targeted exercises and/or referral in order to improve balance and strength to reduce fall risk
- Older adults with high risk of falls
  - should be offered multifactorial falls risk assessment to inform individualized tailored interventions



# Guiding Principles

- Many falls are preventable and predictable
- Some falls cannot be prevented
- Focus should be on proactively preventing fall injuries and decreasing the frequency of falls
- Fall prevention is a shared responsibility that requires a collaborative effort from everyone involved



## Recommended exercise interventions and physical training for adults at risk of falls to improve their strength and balance – What the research shows us in community settings

- Exercise interventions and physical training improve strength and balance and reduce fall and fall injuries, particularly fractures. (El-Khoury, Cassou, Charles, & Dargent-Molina, 2013; Gillespie et al., 2012; NICE, 2013; Stubbs, Brefka, et al., 2015)
- To promote adherence and effectiveness, exercise interventions should be individualized (Mulligan, Tschoepe, & Smith, 2014; NICE, 2013) and supported by an exercise professional. (Martin et al., 2013; Mulligan et al., 2014; NICE, 2013) This is particularly important for adults at high risk of falls with physical co-morbidities. (Stubbs, Brefka, et al., 2015)
- Exercises should be adjusted to the person's abilities (Di Bardino et al., 2012) including cognitive abilities (Chan et al., 2015) and fear of falling. (Lach & Parsons, 2013)



## Recommended exercise interventions and physical training for adults at risk of falls to improve their strength and balance – What the research shows us in community settings (continued)

- Comprehensive exercise programs delivered in groups that focus on fall prevention, muscle strengthening, and balance have been shown to effectively address risk factors, prevent falls and reduce injury from falls.

(El-Koury et al., 2013; Gillespie et al., 2012; NICE, 2013; Stubbe, Brefka, et al., 2015; U.S. Preventive Services Task Force, 2012)

- The protective effects of exercise are most beneficial for severe fall injuries, such as fractures. (El-Koury et al., 2013)
- Individuals with a history of recurrent falls and/or balance and gait deficits will benefit most from proper prescription of exercise. (NICE, 2013)



# Exercise Prescription for Fall Prevention

Updated recommendations for fall prevention practice in older people living in the community:

1. Exercise programs should aim to provide a high challenge to balance
2. At least 3 hours of balance exercise should be performed each week ( 20 minutes thru out the day)
3. Ongoing participation in exercise is necessary or the benefits will be lost (Sherrington C, Michaleff ZA, Fairhall N, et al., 2017)



# The devil is in the details.....

- Not all fall prevention exercise programmes work
- However if done appropriate then can reduce the risk of by 23% (RaR 0.77)
- Reduce the rate of recurring falls by 15% (RR 0.85)
- May reduce fall relate fractures (RR 0.73)
- May reduce falls requiring medical attention (RR 0.61)

- Sherrington et al. JAGS 2008.
- NSWPHB 2011, BJSM 2016
- Cochrane Review 2019; Kendrick focus on falls



# The Devil is in the Details...Continue

Dose ( frequency/time/duration) matter!! Exercise for falls prevention needs to be reframed as a treatment rather than a recommendation.

You would give a cancer patient half a dose or a drug that will not work?

What works best? What do I tell my patients to look for when seeking out a community based program??





## Ideal Falls Prevention Exercise Treatment

- Functional balance and strength– No evidence that supports physical activity such as walking alone
- Needs to be highly challenging and progressive
- 3 x a week for at least 12 weeks
- Effects stop when discontinued



# Its never too late....

- Its never too late to start and there is plenty of research to support gains despite of age if treatment completed as reviewed ( Fiatarone, 1990, Skelton, 1995, Littbrand, 2011 and may more)
- The keys are to start at low intensity , perfecting form and technique, building confidence and then build on the gains ( progressive overload over time) all while managing fatigue and maintaining enjoyment.



# Home Balance & Strength Exercises



## Stand with one foot in front of the other (walk stance)

- Stand next to a sturdy table or counter for support.
- Place one foot in front of the other with a 10 cm (4 inch) gap between the toe of your back foot and heel of your front foot.
- Hold for 10 seconds and repeat with the other foot in front.

### For increased difficulty:

- 1 Use your hands less for support.
- 2 Place your back and front foot closer together.
- 3 Repeat it twice on each leg.
- 4 Slowly walk heel to toe alongside a table or counter.



## Lift your leg to the side

- Stand next to a sturdy table or counter for support.
- Keep your toes pointing forward, lift one leg out to the side and hold for 5 seconds.
- Slowly lower your leg back to the ground.
- Repeat with the other leg.
- Do this 8 times.

### For increased difficulty:

- 1 Use your hands less for support.
- 2 Slowly walk sideways alongside a table or bench, first to your left and then to your right.



## Raise up onto your toes

- Stand next to a sturdy table or counter for support.
- Raise onto your toes by lifting both heels off the ground, and hold for 5 seconds.
- Slowly lower your heels back to the ground.
- Do this 5 times.

### For increased difficulty:

- 1 Use your hands less for support.
- 2 Stand on your right leg and raise onto your toes. Repeat on your left leg.
- 3 Repeat it 10 times.



## Lift your knees

- Stand next to a sturdy table or counter for support.
- Lift your foot off the ground and hold it for 5 seconds.
- Repeat with the other foot.
- Do this 8 times on each leg.

### For increased difficulty:

- 1 Use your hands less for support.
- 2 Lift your knee to hip level.
- 3 Hold it for 10 seconds.



## Sit to stand from a chair

- Sit in a chair with arm rests.
- Scoot your bottom to the front edge of the chair and put your hands on the arm rests.
- Place your feet hip width apart.
- Lean forward and stand up slowly.
- Slowly lower yourself to sit back into the chair.
- Do this 5 times.

### For increased difficulty:

- 1 Use your hands less for support.
- 2 Repeat it 10 times.



## Falls Prevention Clinic at Centre De Santé- Over view

- Population: Clients of CDS or the MHT ( 170 Goulet) or in the community that we service ( when we go off site)
- The clinic has been in operation the last 7 years.
- FREE screening clinic that looks at top modifiable fall risk factors and then, based on the outcomes, a personalized fall prevention strategy/intervention plan is created for the client.
- The clinic was created in accordance with the Canadian Falls Prevention Curriculum and closely follows the standards and guidelines set out in the International Affairs & Best Practice Guidelines – Clinical Best Practice Guidelines – Preventing Falls and Reducing Injury from Falls

Our interdisciplinary team includes:

Primary Care Nurses, Registered Dietitian, Occupational Therapist, Pharmacist and Athletic Therapist/Kinesiologist

- Dedicated stations to complete individual assessments. At the final station, all results are reviewed, and personalized recommendations are shared with the client.
- After the clinic, the interdisciplinary team conducts several follow-ups with the client to review the recommendations and interventions suggested. Copies of report sent to main provider
- Work with community stakeholders to offer exercise classes to meet the standards of fall prevention



# Community options

- Worked with A & O: Support Services for Older Adults to create a program to serve all community members
- Same concept as CDS program, BUT they also offer a 24 week exercise program as part of service ( online – COVID Friendly)
- Who is eligible?
- Older adults 65+
- Live in Winnipeg, Manitoba
- May or may not have had a previous fall
- Medically able to participate in exercise
- Able to perform exercises for one hour
- Able to participate in group exercise



# SafetyAid: Falls Prevention

How much does it cost?

This program is free for eligible older adults.

Who can I contact?

A & O: Support Services for Older Adults Intake Line

In Winnipeg: 204-956-6440

Toll-free: 1-888-333-3121

Fax: 204-946-5667

E-mail: [intake@aosupportservices.ca](mailto:intake@aosupportservices.ca)



# Resource Navigation

<https://preventfalls.ca/resources/resources-for-older-adults/>

Resources for previous slide and several others

<http://canadianfallprevention.ca/>

The Canadian Fall Prevention Curriculum© (CFPC) is designed to build on existing knowledge and skills of health professionals and community leaders working in the area of fall and injury prevention among older adults (those 65 and over).

<https://www.fallsloop.com/>

Loop is the online communication platform that brings together front-line workers, practitioners, caregivers, researchers and policy planners working for the health and independence of the public through fall prevention. Loop is a place to problem-solve together and discuss how to implement evidence-informed and promising practices.





<https://preventfalls.ca/wp-content/uploads/2017/03/Manitoba-Fall-Prevention-Professional-Education-Reference-A-Companion-GuideFINAL.pdf>

Great starting point for resources that are Manitoba based as well as information on new and current fall prevention tools, resources, including exercise programming, staff training opportunities and online communities of learning for health care professionals

Melissa Skrabek-Senécal

[mssenecal@centredesante.mb.ca](mailto:mssenecal@centredesante.mb.ca)

Merci!



# References

1. Sherrington C, Michaleff ZA, Fairhall N, et al. Exercise to prevent falls in older adults: an updated systematic review and meta-analysis. *British Journal of Sports Medicine* 2017; 51:1750-1758.
2. (Winnipeg Regional Health Authority Public Health Surveillance Team. Winnipeg Health Regional Injury Report, 2000-2010. Winnipeg: Winnipeg Regional Health Authority; 2014.)
3. Chan, W. C., Yeung, J. W., Wong, C. S., Lam, L. C., Chung, K. F., Luk, J. K., ... Law, A. C. (2015). Efficacy of physical exercise in preventing falls in older adults with cognitive impairment: a systematic review and meta-analysis. *Journal of the American Medical Directors Association*, 16(2), 149-154.
4. DiBardino, D., Cohen, E. R., & Didwania, A. (2012). Meta-analysis: Multidisciplinary fall prevention strategies in the acute care inpatient population. *Journal of Hospital Medicine*, 7(6), 497-503.
5. El-Khoury, F., Cassou, B., Charles, M. A., & Dargent-Molina, P. (2013). The effect of fall prevention exercise programmes on fall induced injuries in community dwelling older adults: systematic review and meta-analysis of randomised controlled trials. *BMJ*, 347. doi:10.1136/bmj.f6234.
6. Gillespie, L. D., Robertson, M. C., Gillespie, W. J., Sherrington, C., Gates, S., Clemson, L. M., & Lamb, S. E. (2012). Interventions for preventing falls in older people living in the community. *Cochrane Database of Systematic Reviews*, 2012(9). doi:10.1002/14651858.CD007146.pub3.
7. Lach, H. W., & Parsons, J. L. (2013). Impact of fear of falling in long term care: An integrative review. *Journal of the American Medical Directors Association*, 14(8), 573-577.
8. Martin, J. T., Wolf, A., Moore, J. L., Rolenz, E., DiNinno, A., & Reneker, J. C. (2013). The effectiveness of physical therapist-administered group-based exercise on fall prevention: a systematic review of randomized controlled trials. *Journal of Geriatric Physical Therapy*, 36(4), 182-193.
9. Mulligan, N. F., Tschoepe, B. A., & Smith, M. B. (2014). Balance retraining in community-dwelling older adults: Highlights of interventions strategies that hold promise in physical therapy practice. *Topics in Geriatric Rehabilitation*, 30(2), 117-126.
10. Registered Nurses' Association of Ontario. (2017). *Preventing Falls and Reducing Injury from Falls* (4th ed.). Toronto, ON: Author.
11. National Institute for Health and Care Excellence. (2013). Assessment and prevention of falls in older people. Retrieved from: <https://www.nice.org.uk/guidance/cg161/evidence/falls-full-guidance-190033741>.
12. Parachute. (2015). The Cost of Injury in Canada. Retrieved from [http://www.parachutecanada.org/downloads/research/Cost\\_of\\_Injury-2015.pdf](http://www.parachutecanada.org/downloads/research/Cost_of_Injury-2015.pdf).
13. Public Health Agency of Canada. (2014). Seniors' falls in Canada: Second report. Retrieved from [https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/seniors-aines/publications/public/injury-blessure/seniors\\_falls-chutes\\_aines/assets/pdf/seniors\\_falls-chutes\\_aines-eng.pdf](https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/seniors-aines/publications/public/injury-blessure/seniors_falls-chutes_aines/assets/pdf/seniors_falls-chutes_aines-eng.pdf).
14. Stubbs, B., Brefka, S., & Denking, M. D. (2015). What works to prevent falls in community-dwelling older adults? Umbrella review of meta-analyses of randomized controlled trials. *Physical Therapy*, 95(8), 1095-1110.



# Centre de santé

Saint-Boniface



[centredesante.mb.ca](http://centredesante.mb.ca)