



Physical Literacy Movement Preparation For Adults and Older Adults

Physical Literacy:

Physical literacy is the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life.

- International Physical Literacy Association, May, 2014

These exercises can be used for adults and older adults
of any age who wish to improve their

balance, reaction, speed and **agility**

and to feel **more confident** performing daily tasks
and recreational activities.

This movement preparation guide is modified from Canadian Sport for Life Physical Literacy Movement Preparation Guide (for children)

http://www.physicalliteracy.ca/sites/default/files/imce/Physical%20Literacy%20Movement%20Preparation%20Guide_Web.pdf

Table of Contents:

Introduction:	Pg 2
Group Set Up:	Pg 3
Activity Descriptions:	
Dynamics:	Pg 3
Weaving Pylon Drills:	Pg 6
Accelerations:	Pg 7
Ladders:	Pg 9
Mini Core Routine:	Pg 13

Introduction:**Welcome to moving better and with more confidence!**

This Physical Literacy program has been specially designed with the Older Adult in mind. Participating in activities like these 3-5 times a week for 10-30 minutes per session can help increase function and reduce your risk of injury¹. Regular exercise is the best way to improve balance confidence in older adults² and highly active older adults have a lower fear of falling than people who are less active⁵.

The goals of this Movement Preparation are:

- To improve the way adults move, which helps reduce the risk of falls or injury during physical activity. (Karinkanta et al, 3).
- To make life easier for adults: to increase the ease of execution of activities of daily living and to improve strength and stamina to enjoy recreational activities. (Gschwind et al, 4)
- To develop both skills and confidence in movements which help increase both aptitude and ability to participate in unfamiliar activities. (Fabienne El-Khoury et al, 2).
- To foster a more physically active and healthy lifestyle. (Health Canada, 7).

These exercises can be used:

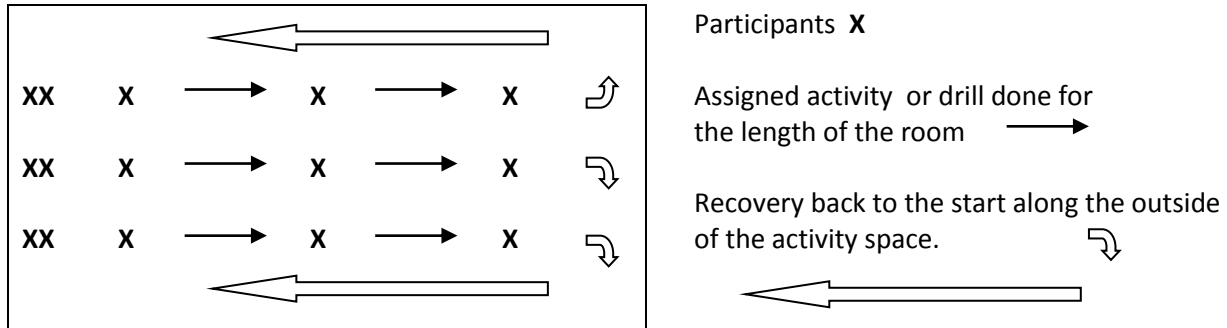
- **As a warm-up or as part of any physical activity program.** The Canadian Sport for Life Physical Literacy Movement Preparation Guide was originally designed as a warm-up. These activities can be used as a warm-up. Individual sections can also be incorporated into any work-out.
- **From beginning to end, or in part.** Ensure you practice all parts of the Movement Preparation, even if on different days, not just one section. For best implementation of learning practice a variety of movements in novel environments.
- **For skill acquisition and then physical conditioning.** Focus on the technique of the movements for skill acquisition and be patient as you and your participants learn the skills. Have fun! Faster movement execution and further physical conditioning will come as the movements are mastered with practice.

As with all exercise, ensure you have clearance from your doctor before beginning an exercise program. Start slow and build duration and intensity gradually.

**Just as important:
HAVE FUN!!!**

Group Set Up:

- Arrange participants in groups of 2-5, in rows at one end of the room.
- The first participant in each group begins the below activities across the longest length of the room. The 2nd participant leaves a small space and follows after, then the 3rd, etc.
- After reaching the end of the room, participants do a recovery walk or jog back to their group around the outside of the activity area to begin the next activity.



Activity Descriptions

1) Dynamics – To engage large muscle groups and prepare the body for physical activity.

a) High Knees



- In short, quick steps, bring knee as close to chest as possible while standing tall.
- Drive knee upward.
- Arms move strongly in opposition to leg.

Modification: Can be done at any walking pace or faster with a hopping step.
Focus on knees up and tall posture before speed.

b) Butt Kicks



- In short, quick steps, bring heel as close to bum as possible
- Heels snap quickly towards bum
- Keep toes flexed (not pointed)
- Make sure upper leg stays perpendicular to the floor (knee pointing towards the floor)

Modification: Can be done at any walking pace or fast with a hopping step.
Focus on full ROM with heels to buttocks before speed. Heal swing should be quick and snappy even at a slow speed.

c) Side Step or Shuffle



- Start perpendicular to the start line.
- Sit in a semi-squat position.
- **Toes pointed forward at all times.**
- Try to keep a steady pace.
- Make sure to do this twice, changing lead leg.

Modification: Can be done as a side step or a quick shuffle.

Focus on smooth lateral movement and toes forward before speed. **Pick up the feet**, do not slide them to prevent falling.

d) Grape Vine:



- Start perpendicular to the start line.
- Arms out for balance.
- Side step.
- Lift trailing foot and step behind support foot.
- Side step.
- Lift training foot up and over, in front of support foot.
- Ensure participant does Grapevine facing both ways from the start line.

Modification: Can be done at a walk or faster.

Focus on smooth feet and hip stability before speed to avoid tripping.

Note: stepping across the midline is not recommended for participants with recent hip replacements. These participants should step only towards the midline, not crossing the thighs. (or repeat the side step).

e) Backward walking



- Moving backwards pushing off the ball of the foot.
- Ensure participant is not leaning back.
- Ensure participant to checking over BOTH shoulders for safety and cervical / thoracic mobility.

Modification: Can be done at any walking pace or faster.

Focus on picking up feet and stepping back smoothly before speed to avoid tripping.

f) Mini Skip



- Participant lifts knee (ideally above belly button if ROM allows).
- Heel is under knee, toes up (flexed).
- Extend leg straight out at a 45-degree angle.
- At the same time, athlete swings opposite arm forward (left leg, right arm).
- Arm moves from hip to lip moving at the shoulder.
- Elbow locked at 90 degrees.
- (Small skip added in)

Modification: Learn movement at a walk.

Focus on strong opposition of arm and leg with a tall body before speed or the addition of the skip.

Progression: 1) Add a calf raise with the knee lift. 2) Transition the calf raise into a (small) skip.

g) Balance / Knee Hug



- Participant takes 3 normal steps and lifts knee up towards 90°, pausing for a moment for balance
- Take 3 normal steps, then lift the other leg

Modification: Lift knee only as high as participant is comfortable, pause only for as long as participant is comfortable, use arms out for balance.

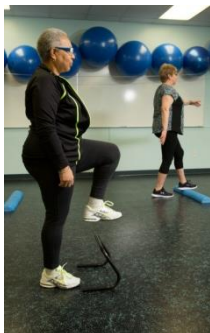
Focus on balance, hip stability and tall posture before knee height.

Progression: As balance improves:

- Participant lifts one knee up towards their chest
- Place both hands on the shin just below the knee, pull the leg toward the arm-pit (in and up) while balancing for balance and hip mobility
- Take 3 normal steps, then lift other knee

h) Obstacle Step Over

Set up half rollers, short hurdles or similar item at varying distances (1-4m apart) in a row in front of each group participants.



- Participant walks or jogs in a straight line stepping over each obstacle as they come to it
- Cue participants to lift foot high over obstacle
- Participant tries to step over obstacle without stopping or doing a 'stutter step' before the obstacle
- Encourage the use of both legs to step over the obstacle

Modification: Can be done at any walking pace or faster.

Flat markers / slats can be used for those with limited balance, or who require a walking aid such as a wheeled walker. The marker is an imaginary obstacle that participants lift their leg to step over.

Focus on continuous gate without pausing at the obstacle before speed. Lift foot high enough to clear obstacle.

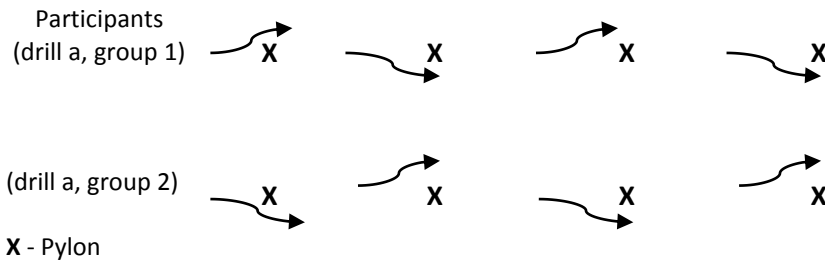
2) Weaving Pylon Drill – A repetition based cutting and manoeuvring drill with cardiovascular benefits. Set up one set of pylons 1-2m apart for every 2-5 participants. (X represents pylon)

a) Sagittal (forward) movement with lateral cuts

Start facing down the row of the pylons. Travel forward (brisk walk or run) across the room, weaving through pylons. Keep body facing forward.

Focus on stable and sharp changes of direction (cuts)

- 2-5 times starting on the right of the first pylon,
- 2-5 times starting on the left of the first pylon.



b) Lateral movement with sagittal cuts

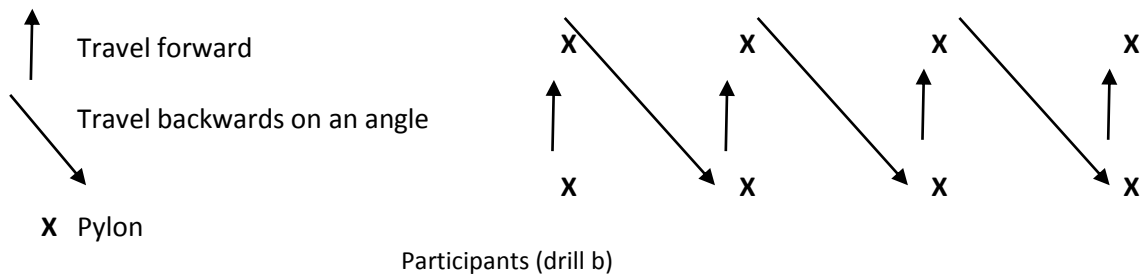
Start perpendicular to the rows of the pylons. Travel forward (brisk walk or run) to the right of the first pylon. Plant the left foot, then the right foot to change direction. Travel backwards and to the right on an angle around the next pylon. Plant the left foot, then the right to change direction. Weave through the length of pylons.

NOTE: when traveling to the left, feet plant right then left to change direction.

Focus on stable and sharp changes of direction (cuts)

- 2-5 times travelling left to right,
- 2-5 times traveling right to left.

Set up one circuit for every 5 participants.



3) **Accelerations** – For neuromuscular and cardiovascular benefits.

Goal of accelerations is to work on increasing speed across the length of the room.

Focus on a strong arm swing in opposition to the legs to increase speed.

Modifications and progressions: Accelerations can be a walk to a brisk walk, a walk to a jog, or a jog to a run.

a) **Acceleration only**

- Begin at start line
- Travel across the room, increasing speed across the length of the room.

b) **Drop and Go:**

Set up one chair for each group of participants.



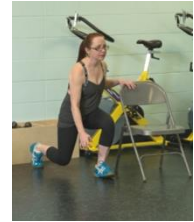
- Participant sits in a chair, facing direction of travel.
- Stand quickly and immediately accelerate across the room.

Modification:

- Place a yoga block on the chair to lift the height of the chair.

Progression:

- Instead of sitting in the chair, lower to a lunge or squat.
- Stand quickly and immediately accelerate across the room.



c) **90° hip opener and Go:**

- Start facing the side wall, with the length of the room to the participant's right
- Lift the right foot, opening the hip to and step towards the direction of travel (open the hips, do not twist the left knee).
- Step forward and accelerate across room.
- Perform twice: once on the left, once on the right.



Progression:

- 2 foot hop to rotate 90° and accelerate.
- 2 foot jump to rotate 90° and accelerate.

d) 180° hip opener and Go:

(part 1)

Start facing the side wall, with the length of the room to the participant's right

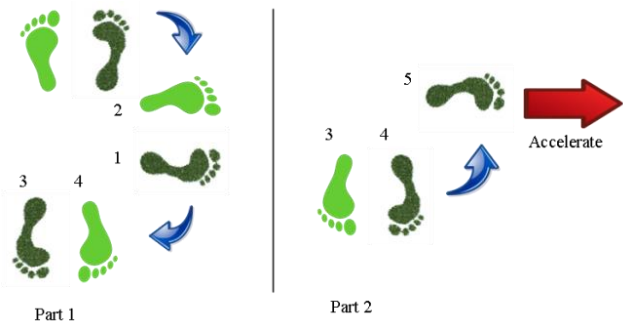
1. Lift the right foot, opening the hip to and step towards the direction of travel (open the hips, do not twist the left knee).
2. Transfer weight and lift the left foot; step to face the front.
3. Lift the **right foot** again, **step to rotate in same direction** again.
4. Transfer weight and lift the left foot; step to face the right wall.

Participant has performed 2 equal 90° turns, both in the same direction.

(part 2)

5. Lift the **left foot** and step to the front, again opening hip. Step forward and accelerate across room.

Perform twice: once on left, once on the right.

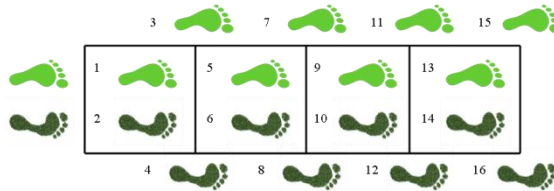


Progression:

- 2 foot hop to rotate 2X90° in one direction and 1X90° back to front to accelerate.
- 2 foot jump to rotate 2X90° in one direction and 1X90° back to front to accelerate.
- 2 hop 180° jump to face other wall, step forward and accelerate.
- 2 foot 180° jump to face other wall, step forward and accelerate.

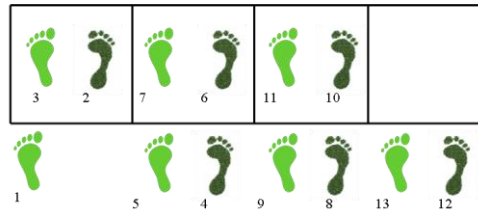
4) Ladders – Quick stets and eye-foot coordination improves agility, reaction and awareness. Begin by learning the movement. Progress to faster steps after the movement pattern has been accomplished. **Focus on accuracy before speed.** Perform each drill 2-4 times.

a) In, In, Out, Out FRONT



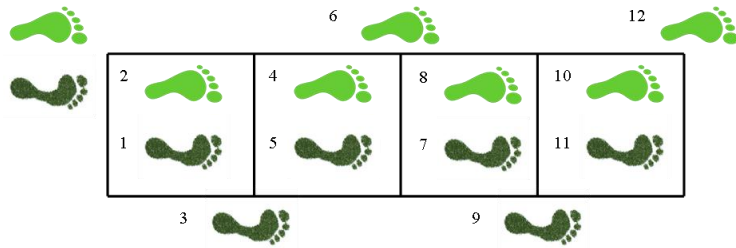
- Start with the feet hip-width apart at the bottom of the ladder facing the length of the ladder.
- Step into the first square with left foot forward, immediately followed by the right foot (In, In).
- Step outside to the left of the second square (with the left foot), then immediately step outside to the right of the second square (with the right foot) (Out, Out).
- Step back into the third square with the left foot first, followed by the right foot.
- Repeat for the length of the ladder.
- Participants can repeat “In, In, Out, Out” in their head to help keep the pattern.

b) In, In, Out, Out LATERAL



- Start with the feet hip-width apart at the bottom of the ladder perpendicular to the ladder with the ladder extending to the left side.
- Step into the first square with left foot forward, immediately followed by the right foot (In, In).
- Step backwards out of the ladder behind the second square (with the left foot), then immediately step outside to the right of the second square (with the right foot) (Out, Out).
- Step back into the second square with the left foot first, followed by the right foot.
- Repeat for the length of the ladder.
- Participants can repeat “In, In, Out, Out” in their head to help keep the pattern.
- Repeat leading to the right.

d) Icky Shuffle (In, In, Out)



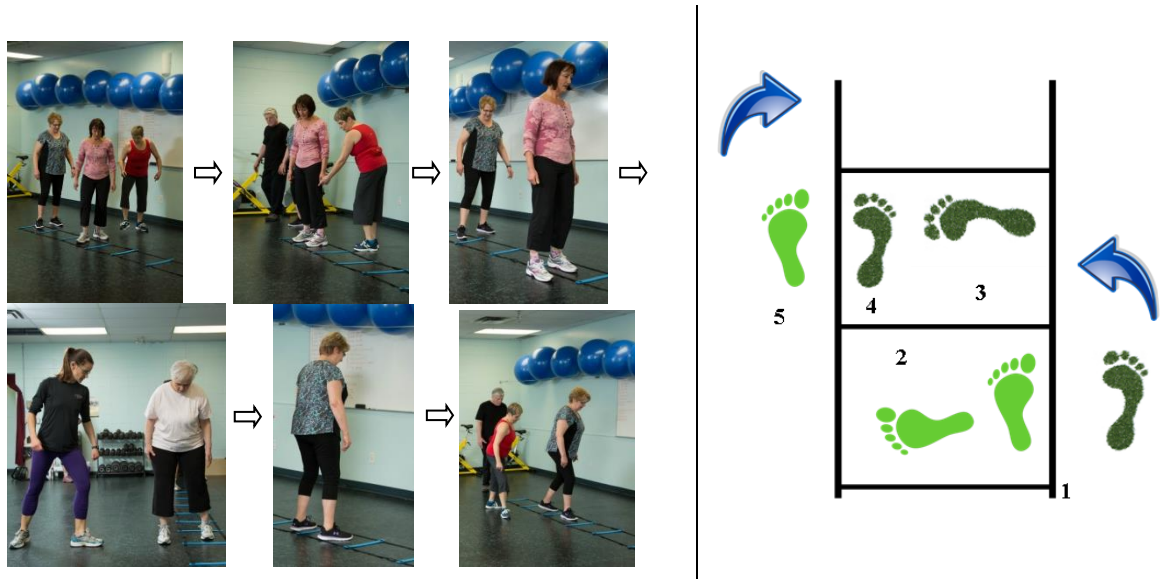
- Start standing beside the first square on the left side of the ladder.
- Step into the square first with the right foot, then step into the same square with the left foot (In, In).
- Step outside the square with right foot (to the side of the first square) (Out).
- Step forward with the left foot into the second square, right foot steps into the same square (In, In).
- Step outside the second square with the left foot (to the side) (Out).
- Right foot steps forward into the third square.
- Repeat for the length of the ladder.
- Participant can repeat “In, in, out” or “1,2,3” to maintain pattern.

e) Rapid Through



- One foot per rung, quickly through the ladder to the end.

f) Twisties



- Start with feet spanning the outside right rail, left foot inside the first square (with hip open/toe out), right foot outside the first square (in).
- Shift weight to the left foot and step right foot into the 2nd square with an open hip. (up)
- Shift weight into the right foot and step the left foot up to the outside-left of the 2nd square. (out)
- Shift the weight to the left foot and open hip / point toes towards right with the right foot in the 2nd square. (in)
- Shift the weight to the right foot and step left foot into the 3rd square with an open hip. (up)
- Shift back to the left foot and step the right foot up to the outside-right of the 3rd square. (out)
- Repeat for the length of the ladder.
- Participant can repeat “In, Up, Out” in their head to maintain pattern.

Progression:

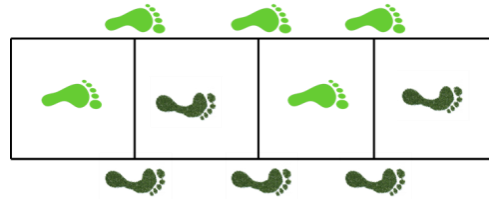
- Step ‘in, up, out’ in a more rapid manner, initiating the movement by twisting (internally and externally rotating) at the hips
- Turn the steps into small jumps, initiating the rotation from the hips
 - Straddle the outside of the ladder
 - Rotating from hips, hop and rotate 90⁰, landing with feet parallel to ladder, 1 for in each rung.
 - Hop and rotate 90⁰ from the hips landing straddling the other side of the ladder
 - Repeat pattern

g) High Knees



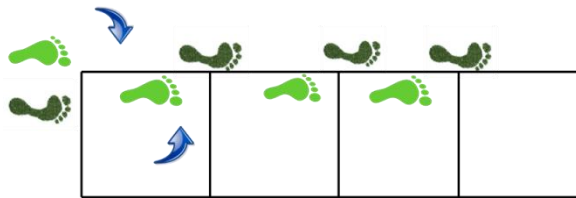
- Drive left knee up over their belly button with knee bent at 90 degrees, ankle in line with knee.
- Drive the left knee down so the left foot is in the first square.
- Right knee drives up and down with right foot planting into the second square.
- Repeat pattern for length of ladder.
- Arms are in opposition to legs, elbows at 90⁰

h) Hop Scotch



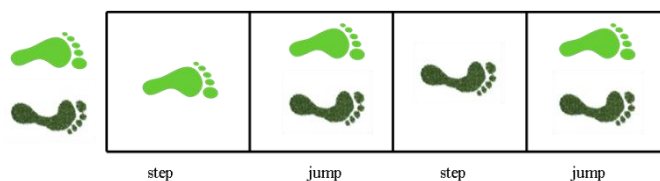
- Start with both feet outside the ladder straddling the first rung.
- Step left foot into the 1st square, balancing on the left foot.
- Step or hop both feet out so the feet are again outside the sides of the ladder, this time at the 2nd rung.
- Step right foot into the 2nd square, balancing on the right foot.
- Repeat pattern for length of ladder.

i) Lateral Crossovers (not recommended for those with hip replacements)



- Start with both feet outside the ladder on the side of the first square (right foot closest to the ladder)
- Swing the left leg out and around to the front of the body, while hopping or stepping off the right leg
- Land with the left foot on the inside of the ladder (step / hop over the webbing)
- Swing right leg around to the front of the body, while stepping / hopping off the left leg
- Land with the right foot only on the inside of the ladder (step / hop over the webbing)
- Repeat pattern for length of ladder

i) Step, Jump



- Step left foot into 1st square
- Jump and land with both feet in 2nd square, ensure weight is transferred through the foot to the heels and knees bend on landing.
- Step right foot into 3rd square
- Jump and land with both feet in 4th square, ensure weight is in the heels and knees bent on landing.
- Repeat pattern for length of ladder

5) **Mini Core Routine** – To activate and strengthen core stabilizing muscles.

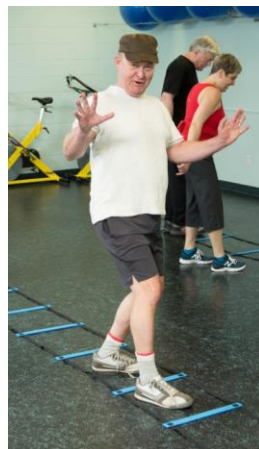
Hold each plank for about 10 seconds

Can be performed from toes or the knees on the floor, on a raised surface such as a bench or the wall.



- a. Front plank (full or $\frac{3}{4}$)
- b. Side planks (knee, knee star, feet, feet star)
- c. Pointer Plank:
 - Front plank
 - Extended one arm in front
- d. Up, up, down, down plank:
 - Front plank on forearms.
 - Press Up, Up (left then right arm) to hand plank.
 - Return Down, Down (left then right) to forearm plank.
 - Alternate leading with right arm and left arm
- e. Leg extended plank:
 - Front plank on forearms
 - Extend one leg back: lift foot or knee only a few cm off the ground. Maintain solid plank.
 - Return to front plank
- f. Rolling plank:
 - Front plank on forearms
 - Rotate open to side plank
 - Rotate back to front
 - Rotate open to other side

Physical Literacy – a life long journey!



References

1. Catherine Sherrington^{A,B,E}, Anne Tiedemann^{A,B}, Nicola Fairhall^{A,C}, Jacqueline C.T. Close^{B,D} and Stephen R. Lord Exercise to prevent falls in older adults: an updated meta-analysis and best practice recommendations, NSW Public Health Bulletin, http://www.publish.csiro.au/?act=view_file&file_id=NB10056.pdf
2. Fabienne El-Khoury, Bernard Cassou, Marie-Aline Charles, Patricia Dargent-Moling, 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, <http://www.bmj.com/content/347/bmj.f6234>
3. Karinkanta, S., Kannus P., Uusi-Rasil K., Heinonen A., Sievanen H., Combined resistance and balance-jumping exercise reduces older women’s injurious falls and fractures: 5-year follow-up study, British Geriatrics Society, <http://ageing.oxfordjournals.org/content/44/5/784.full>
4. Gschwind Y., Kressig R., Lacroix A., Muehlbauer T., Pfenninger B., Granacher U., A best practice fall prevention exercise program to improve balance, strength / power, and psychosocial health in older adults: study protocol for a randomized controlled trial, BMC Geriatrics <http://bmcgeriatr.biomedcentral.com/articles/10.1186/1471-2318-13-105>
5. Legters K., Fear of Falling, Journal of American Physical Therapy Association, <http://ptjournal.apta.org/content/82/3/264>
6. Bula C., Monod S., Hoskovec C., Rochat S., Interventions Aiming at Balance Confidence Improvement in Older Adults: An Updated Review, Gerontology, https://www.researchgate.net/publication/47645259_Interventions_Aiming_at_Balance_Confidence_Improvement_in_Older_Adults_An_Updated_Review
7. Health Canada, Division of Aging and Seniors, Healthy Aging Physical Activity and Older Adults, <http://publications.gc.ca/Collection/H39-612-2002-4E.pdf>

A special thank you to all of the volunteer models in the photos.