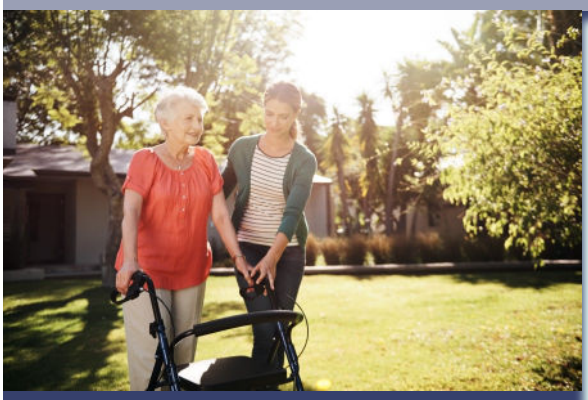
Safe Use of Mobility Aid Checklist (SUMAC)

- 4 Wheeled Walker

v1.2e

University of Western Ontario



Tasks:

1. Transition Sit to Stand
2. Gait with Pivot Turn to Approach Chair to Sit
3. Ambulation on a Level Surface
4. Walking while Performing Horizontal Head Turns
5. Walking while Performing a Concurrent Cognitive Task
6. Walking while Negotiating Obstacles
7. Walking through an Open Doorway
8. Open and Walk through a Door that
9. Open and Walk through Door that Opens Towards

Introduction

For use with 4 Wheeled Walkers Only

Testing involves the performance of nine tasks. Evaluation is divided into "Physical Function" and "Interaction with Equipment" sections. Each of these sections has several criteria that will be scored. The sum of these individual scores will give the score for each section in each task.

When completed, the section scores can be summed to give an overall Physical Function(PF) score (0ut of 40) and an overall Interaction with Equipment (EQ) score (out of 63).

Time to Complete Assessment: 10 Minutes

Equipment Needs:

Standard height chair with arm rests

- Two small orange cones
- A standard doorway opening
- Door that does not self-close

Space Required for Assessment: 6 Meters

Psychometric Properties:

Inter-Rater Reliability

- ICC: 0.92 (0.81, 0.98), p<0.001
- ICC: 0.82 (0.54, 0.95), p<0.001

Test-Retest Reliability

- ICC: 0.89 (0.81, 0.94), p<0.001
- ICC: 0.88 (0.79, 0.93), p<0.001

Standard Error of Measurement

PF= 1.31 EQ= 1.93

Minimum Detectable Change(MDC95)

PF= 3.64 EQ= 5.35

Online Resources: http://mobility-in-aging-lab.ca/

Cueing

Cueing can refer to several things including:

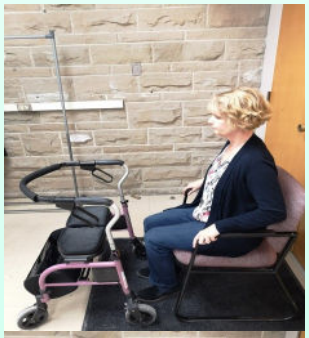
- Safety reminders (e.g. to disengage brakes before walking).
- Reminding the participant what they have to do next.
- Prompting the participant to complete head turns or cognitive task.
- Reminders during the cognitive task (e.g. saying what number they were on during a counting task).
- Non-verbal cueing such as having to guide the participant in the correct direction.

Should any of these occur a score of 0 should be given under the cueing section.

Task 1: Transition Sit to Stand

People will start from a seated position in a standard height chair with armrests. On the command, “go” , they will stand, walk forward on a level surface for 6 meters at a self-selected comfortable pace, turn around, walk back to the chair, turn and sit back down (Evaluation of Task 1 and 2 are combined in the same assessment)

Equipment: Standard height chair with arm-rests

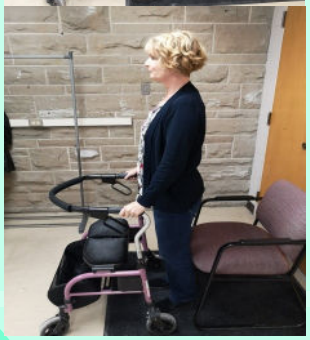


Beginning in a seated position.

- Brakes engaged
- Walker positioned within arm’s reach

Standing Transition

- Reaches one hand at a time
- Feet remain within base of support of walker



Standing Position

- Upright posture of trunk
- Establishes balance before unlocking walker

Commence 6m walk

Safety

Always ensure participant safety.

This means cueing or assisting the participant if they are engaging in unsafe practices.

Examples:

- Participant leaves the walker to the side as they attempt to sit.
- Participant does not engage brakes prior to sitting.
- Participant is not properly aligned with chair.
- Participant loses balance while attempting turn and pivot.

Under any of these circumstances, ensure participant safety and score accordingly.

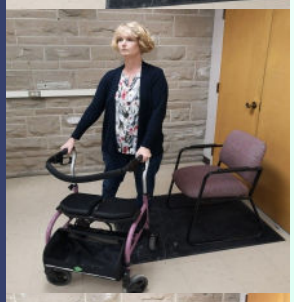
Task 2: Gait with Pivot Turn to Approach Chair to Sit

People will start from a seated position in a standard height chair with arm-rests. On the command "go" they will stand, walk forward on a level surface for 6 meters at a self-selected comfortable pace, turn around, walk back to the chair, turn and sit back down (Evaluation of Task 1 and 2 are combined in the same assessment)

Equipment: Standard height chair with arm-rests

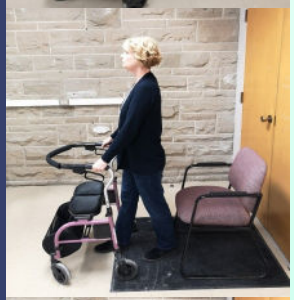
Gait to Chair

- Approach chair and begin turn
- Feet remain within base of support of walker



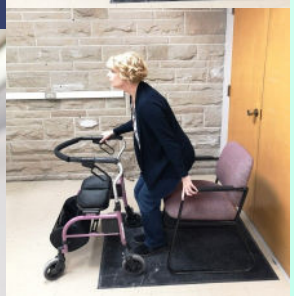
Pivot

- Feet do not collide with walker
- Watch for any unsteadiness or small steps to catch balance



Approach to Sit

- Upright posture of trunk
- Independent, continuous steps backward until legs reach chair



Sitting

- Brakes engaged prior to starting sit
- Reaches one hand at a time to grasp arms of chair

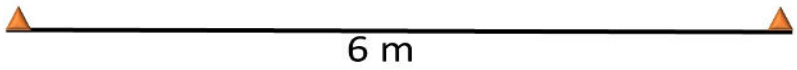
End in seated position

- Smooth controlled lowering into seated position

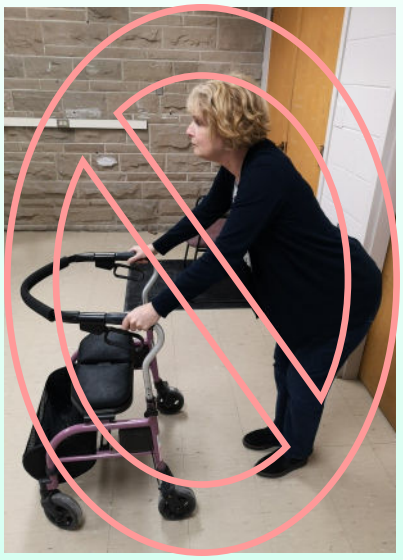
Task 3: Ambulation on a Level Surface

People will start from a standing position and then will walk on a level surface at a self-selected comfortable pace for up to 60 meters.

Equipment: None

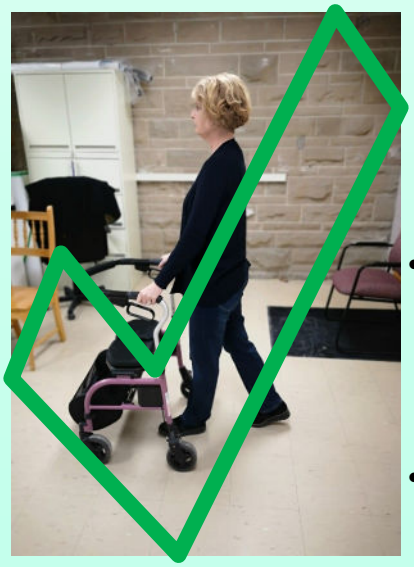


Participants will perform the 60 meter walk by completing consecutive loops of the 6 meter track



What to look for:

- Does the participant begin walking right away?
- Does each swing foot pass and land beyond the stance foot?
- Does each foot completely clear the floor with no scuffing of toes or dragging of heels?
- Is each step of equal length?



- Does the participant take continuous steps without stopping?
- Does the participant have any deviations from a straight path? If so, how much do they deviate?
- Does the participant walk in a flexed position abnormal from their natural posture?

Things to consider:

During the ambulation on level surface task (Task 3):

If the participant needs more than minimal assistance to walk or cannot walk at least 5m (representing scores of 0 on these items) then testing is stopped.

These two items represent the minimum functional requirements to carry on with this assessment. If an individual fails to meet these, they are not suitable for completing the other tasks in the scale.

Interaction with Equipment Considerations:

Base of Support for walker:

On turns watch for feet colliding with wheels of walker.

If the participant is kyphotic, look for deviations from their normal posture.

Having marked deviation from a straight path with the walker or having the walker get too far ahead is considered losing control.

Any safety concerns or prompts to stay on task are considered cueing (See info box on page 2).

Task 4: Walking while Performing Horizontal Head Turns

People will walk at a self-selected pace on a level surface for 6 meters, walk around an obstacle, and walk back 6 meters while turning their head from side to side.

Equipment: One orange cone placed on the floor

Physical Function

- Look for changes in gait speed or pattern compared to usual walking in Task 3
- Notice if the individual has to stop either walking or head turns or any stumbles or losses of balance

Interaction with Equipment

- Feet remain within base of support of walker
- Feet do not collide with walker
- Participant maintains an upright posture
- No contact made with obstacles
- Maintains control of equipment

Single Task

In sitting perform a single cognitive task evaluation.

This will assist in determining the cognitive task you will use during Task 5.

If choosing a subtraction task, begin by having the client complete 10 serial subtractions from 100.

If choosing a verbal fluency task, begin by having the client complete 10 consecutive letters in the alphabet.

Progress difficulty of these tasks until you reach the highest level the participant can complete. (See: Task Hierarchy)

Record:

- Time it takes to complete
- Number of errors

Task 5: Walking while Performing a Concurrent Cognitive Task

People will walk at a self-selected walking pace on a level surface for 6 meters, walk around an obstacle, and walk back 6 meters while performing a concurrent cognitive task aloud. The difficulty of the cognitive task is individualized to each person's abilities. Indicate on score sheet the secondary task used.

Equipment: One orange cone placed on the floor

Selecting the concurrent cognitive task:

In sitting, determine highest level activity person is able to perform.

Titrating task difficulty is important to individualize testing.

Ensure the cognitive task is recorded on the assessment form.

Task Hierarchy:

-Counting back by 1's

-Counting back by 3's

-Counting back by 7's

Or

-Reciting alphabet forwards

-Reciting alphabet backwards

-Verbal fluency task

- Recite words that start with a certain letter

- Recite words in a category (e.g. animals)

NOTE:

- If the participant needs reminders during the cognitive task this counts as cueing.

- If the participant cannot complete both tasks at once:

  - stops counting (Score 1 for posture first)

  - stops walking (Score 0 for posture second)

Physical Function:

Scoring of the physical function sections for Tasks 4-9 is done by comparing to usual gait seen in Task 3.

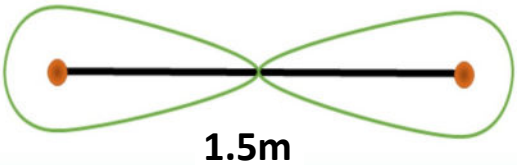
Watch for:

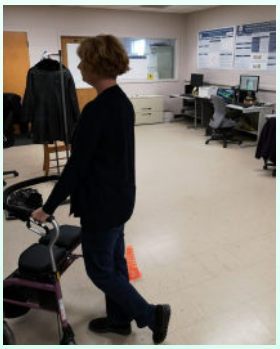
- Slowing of gait
- Unsteadiness
- Change in gait pattern
- Stopping or staggering

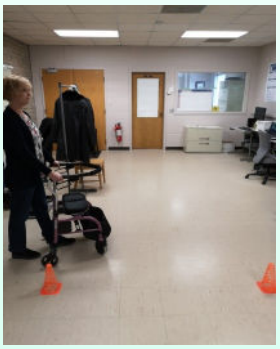
Task 6: Walking while Negotiating Obstacles

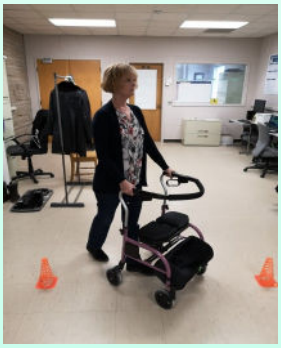
People will walk in a figure of eight pattern. Two cones will be placed 1.5 meters apart and people will walk around the cones to complete a figure of eight. The person will complete this pattern twice for a single test session.

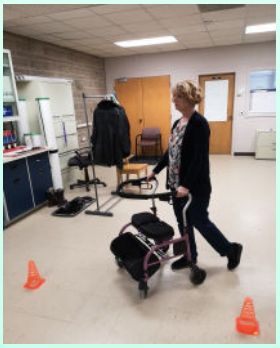
Equipment: Two orange cones placed on the floor











Ensure that participant:

- Maintains control of the equipment with an upright posture and feet remain within the base of support of the walker.
- Does not make contact with any obstacles

Task 7: Walking through an Open Doorway

People will walk through an open doorway at their self-selected comfortable pace. There will be a 3 meter distance to walk before and after the doorway to judge any gait alterations.

Equipment: A standard single doorway opening

Tips:

- Explain to participant to continue straight after they walk through the doorway
- In the case that there isn't room for a 3 meter walk after the doorway, give the participant a direction in which to turn

Watch for:

- Slowing of gait or pausing as they walk through the door. This will affect the Physical Function section of this test
  - If needed provide cueing and score accordingly
- If the participant reaches for door, takes their hands off of their device or makes contact with any part of the doorframe

Environmental limitations:

Ideally this assessment should be performed in an environment that allows enough space to be completed in a safe and proper manner.

However, especially if the assessment is being conducted in an individual's home, there may be limitations out of the practitioner's control.

Example:

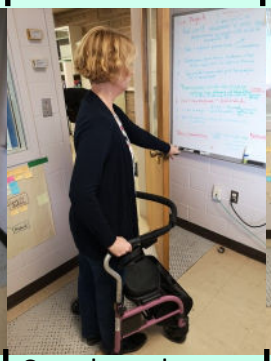
- Sink or bathtub that blocks approach from the correct angle

In this situation the assessor should give a zero for that element.

Task 8: Open and Walk through a Door that Opens Away

Facing a door that opens away from the person, they will open the door, walk through it, and then close the door.

Equipment: Perform assessment with a door that does not have a self-closing mechanism

			
Approaches door facing the door knob	Reaches for door knob with closest hand, pushes open without losing balance	Opens door wide enough to get body and aid through comfortably	Both hands on grips of walker and body or aid does not hit door frame or door
			
When clear, reaches for door within arms reach	Can close the door comfortably without colliding with body or mobility aid	Does not need to walk with one hand on walker to close the door	Keeps feet within base of support and an upright posture while closing door

Task 9: Open and Walk through Door that Opens Towards

Facing a door that opens towards the person, they will open the door, walk through it, and then close the door.

Equipment: Perform assessment with a door that does not have a self-closing mechanism

Approaches door facing the hinges, body and mobility aid are clear of door path

Reaches for door knob with closest hand, pulls open without losing balance

Opens door wide enough to get body and aid through opening

Both hands on grips of walker while walking through opening

Walks through door without colliding body or aid on door or door frame

When through, able to reach for door within arm's reach

Does not need to walk with one hand on walker to close the door

Keeps feet within base of support and an upright posture while closing door

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Online Resources: http://mobility-in-aging-lab.ca/

Ontario Neurotrauma Foundation
Fondation ontarienne de neurotraumatologie