

Physical Mobility Scale (PMS)

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Why Was the Physical Mobility Score Developed?

“The PMS was developed by physiotherapists working in residential aged care to specifically show resident functional mobility and to provide information regarding each resident’s need for supervision or assistance from one or two staff members and equipment during position changes, transfers, mobilising and personal care.” (Nitz, Hourigan and Brown, 2006)

| Physical Mobility Scale | | Date: |
|-------------------------|---|------------|
| Supine to side lying | 0: no active participation in movement 1: max assist, but turns head to roll 2: max assist, but rolls shoulder or legs 3: requires equipment (eg. Bed rail) to side-lie 4: requires verbal cueing to roll 5: independent- no assistance or prompting | (R) (L) |
| Supine to Sit | 0: max assist, no head control 1: max assist, but controls head 2: requires assist with trunk & L/E or U/E 3: requires assist with L/E or U/E only 4: supervision required only 5: Independent and safe | |
| Sitting balance | 0: total assistance, requires head support 1: sits with assistance, controls head 2: uses arms for support 3: unsupported for 10 sec. 4: unsupported, turns head & trunk to L & R 5: unsupported, touch floor & return to sit | |
| Sitting to Standing | 0: unable to weight bear 1: full assistance of therapist, Describe: 2: requires equip (e.g.rail) to pull to stand. Describe. 3: push to stand, SBA, wt unevenly distributed 4: push to stand, wt evenly distributed, may require bar/frame to hold once standing 5: Independent, even wt bearing, hips and knees extended, no use of U/E | |

| | | |
|---------------------|--|---------------------------|
| Standing to Sitting | 0: unable to weight bear 1: full assistance of therapist. Describe: 2: can initiate flexion, requires assist, holds arms of chair, wt evenly/unevenly distributed 3: poorly controls descent, SBA, holds arms of chair, wt evenly/unevenly distributed 4: controls descent, uses arms to lower, wt evenly distributed 5: Independent, no use of arms, wt evenly distributed | |
| Standing Balance | 0: unable to stand without hands-on assist 1: able to safely stand using device/aid 2: stand indep for 10 sec without device 3: stand turn head & trunk look behind R&L 4: able to pick up object fm floor safely 5: single leg stance (Right & Left record time) | Left _____ Right _____ |
| Transfers | 0: non-weight bearing hoist (full hoist) 1: weight bearing hoist (standing hoist) 2: assist required by 2 person. Describe: 3: assist required by 1 person. Describe: 4: SBA (prompting required only) 5: Independent | |
| Ambulation mobility | 0: bed / chair bound 1: wheelchair mobile 2: ambulate with assist by 2 person 3: ambulate with assist by 1 person 4: SBA (prompting required only) 5: ambulates independently. Aid: | |

Mobility Impairment (total __/45)

0 – 18 Severe = low fall risk

19 – 27 Moderate

28 – 36 Mild = highest fall risk

37 – 45 Highest Independence

Research

- Other outcome measures (e.g. Berg Balance Scale, Timed up and go, Gait speed) can be too challenging for clients physically or cognitively impaired.
- Studies to validate the PMS have been completed in a LTC setting (Nitz, Hourigan and Brown, 2006) (Pike and Landers, 2010) (Barker et al., 2012)
- Validity of items tested compared to gold standard functional outcome measures (e.g. Clinical outcomes variables scale (COVS) and Rivermead Mobility index (RMI)). (Nitz, Hourigan and Brown, 2006)
- Validity compared to COVS and RMI: high (Nitz, Hourigan and Brown, 2006)
- Concurrent validity with COVS and RMI (Pike and Landers, 2010), (Barker et al., 2008)

Research

- Years of experience or location of training (i.e. internationally trained) of physiotherapists scoring PMS: no effect on score. (Nitz, Hourigan and Brown, 2006)
- Intrarater & Interrater Reliability: high (Pike and Landers, 2010), (Nitz, Hourigan and Brown, 2006)
- Minimal Detectable change₉₀ (MDC): 4-5 points (Pike and Landers, 2010), (Barker et al., 2008)
- Minimally clinically important difference (MCID) for improvement: 5 points (Pike and Landers, 2010)
- MCID for worsening: 4 points (Pike and Landers, 2010)
- No ceiling or floor effects were noted with the PMS (Barker et al., 2008)

Clients with:

Personal Experience at St. Joe's

- Dementia
- Stroke
- Parkinson's Disease
- Amputations
- Post MI
- Post CAGB
- Failure to cope
- Delirium
- Palliative conditions
- COPD
- Cancer
- Acquired Brain Injury
- Geriatric Frailty
- Diabetes
- Ambulatory clients with and without gait aids
- Ambulatory clients with and without assistance from a staff member
- Non-ambulatory

Study populations*

- Cerebral palsy (any age)
- Parkinson's disease
- Osteoporosis
- Frailty
- Multiple lacunar infarcts
- Dementia
- Depression
- Diabetes mellitus
- Previous hip fracture
- Hypertension
- COPD
- Coronary Artery Disease
- Ambulatory clients with and without gait aids
- Ambulatory clients with and without assistance from a staff member
- Non-ambulatory
- *(Barker et al., 2012) (Pike and Landers, 2010) (Barker et al., 2008) (Nitz, Hourigan and Brown, 2006) (Tarsuslu and Livanelioglu, 2010)

Why the PMS is useful:

- The PMS can be used to determine who is at high and low risk of falling (Barker et al., 2012):
 - Clients who scored fully dependent (0-9/45) were the least likely to fall
 - Clients who scored a mild mobility impairment (28-36/45) were the most likely to fall
 - Each individual item score and the total score of the PMS can indicate a client's fall risk.
 - Standing balance has the highest predictive value of a client being at risk of falling based on his/her score.

Considerations for Clients with Osteoporosis (OP)

- These questions were answered by a member of the Scientific Advisory Council from Osteoporosis Canada.
- Question 1: sitting balance
 - unsupported, turns head and trunk to left and right (it does not specify end range, so could be within client comfort)
 - sitting balance - unsupported, touch floor and return to sit (this seems like end range flexion is expected)
- *Answer: The first item is probably ok if done slowly and not to end range. The second is probably a bad idea for anyone – end range forward flexion in a seated position. (Long, 2017)*

Considerations for Clients with Osteoporosis (OP)

- Question 2: standing balance
 - stand and turn head and trunk look behind right and left
 - standing balance - able to pick object from floor safely
- *Answer : Again, the turn is probably ok if slow and not to end range. The second depends on the movement strategy they use e.g., end range spine flexion versus hip hinge with knee and ankle flexion. (Long, 2017)*

Unanswered Questions we have:

- Standing balance for clients with amputations, how do we score them? Equal weight-bearing?
- Ambulation/Mobility: one article sites wheelchair mobile (50 feet without assistance) (Pike et al.
- Single leg stance: is there a specific amount of time that it needs to be held? Which leg is scored (right or left)?

References

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