

# PREDICTORS OF BASIC MOBILITY SKILLS AT DISCHARGE IN 235 PATIENTS WITH HIP FRACTURE

## BACKGROUND

Patients sustaining a hip fracture face severely reduced physical performance in terms of mobility in their own home and in the community. Functional decline occurs in different areas of the patients' everyday lives and influences both advanced activities of daily living (ADL) as well as basic ADLs such as getting in and out of bed, getting up from a chair and walking. The aim of this study was to identify predictors for performing basic mobility skills at discharge using the Cumulated Ambulation Score (CAS).

## METHODS

From June 2015 to May 2016, 235 consecutive patients (76% female, median age 85 (78-89 IQR)) with hip fractures admitted to the Department of Orthopedic Surgery at North Denmark Regional Hospital were included. Inclusion was restricted to first time hip fractures and age  $\geq 65$ .

Exclusion criteria: death during admission or unrecorded CAS at discharge.

Predictor variables: Age, gender, fracture type, length of stay (LOS), time to surgery (TTS), presence of comorbidity and pre-fracture functional status (PFS).

Basic mobility was assessed at discharge using the Cumulated Ambulation Score (CAS), which consists of 1) getting in and out of bed, 2) rising from a chair and 3) walking. Possible scores for each task are: unable (CAS=0), supported (CAS=1) or independent (CAS=2). A total score of 6 indicates independence in basic mobility.

## RESULTS

**Table 1: Patient characteristics**  
Values are presented as median (IQR) or as number of patients (%). N = 235

Age in years, median (IQR)	85 (78-89)
Male	57 (24.3)
Female	178 (75.7)
Fracture type, n(%)	
Medial	121 (48.5)
Per- or subtrochanteric	114 (51.5)
LOS in days, median (IQR)	7.0 (5.0-8.7)
Time to surgery, n(%)	
$\leq 48$ hours	204 (86.8)
$> 48$ hours	31 (13.2)
CCI, median (IQR)	1 (1-2)
CCI = 0	57 (24.3)
CCI $> 0$	178 (75.7)
Pre-fracture functional status, n(%)	
Independent (CAS = 6)	213 (90.6)
Not independent (CAS $< 6$ )	22 (9.4)
In and out of bed at discharge, n(%)	
CAS 0	14 (6.0)
CAS 1	133 (56.6)
CAS 2	88 (37.4)
Rise from a chair at discharge, n(%)	
CAS 0	17 (7.2)
CAS 1	101 (43.0)
CAS 2	117 (49.8)
Walking at discharge, n(%)	
CAS 0	42 (17.9)
CAS 1	90 (38.3)
CAS 2	103 (43.8)

LOS = Length of stay, CCI = Charlson Comorbidity Index  
CAS 0 = Unable to perform the task, CAS 1 = able to perform the task with physical or verbal support, CAS 2 = independent performance of the task

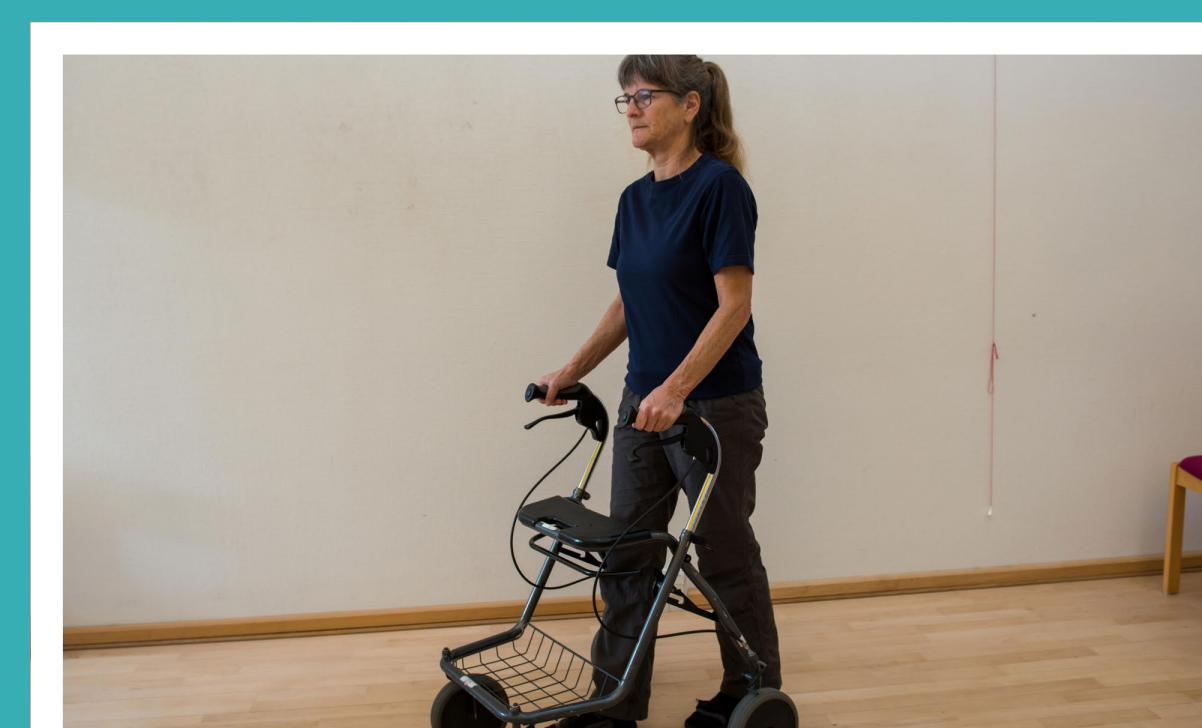
**Predictors of independent performance of CAS. Estimates are presented with odds ratios and 95% CI. (N = 235).**



Age	0.92 (0.89-0.95), p<0.01
Medial fracture	1.90 (1.05-3.44), p=0.03
LOS	1.12 (1.00-1.25), p=0.04
CCI>0	0.46 (0.25-0.91), p=0.03



Age in years	0.92 (0.89-0.95), p<0.01
LOS in days	1.22 (1.08-1.36), p=0.01
CCI>0	0.18 (0.09-0.40), p<0.01



Age in years	0.91 (0.86-0.96), p<0.01
LOS in days	1.17 (1.05-1.31), p=0.01
CCI>0	0.22 (0.11-0.46), p<0.01

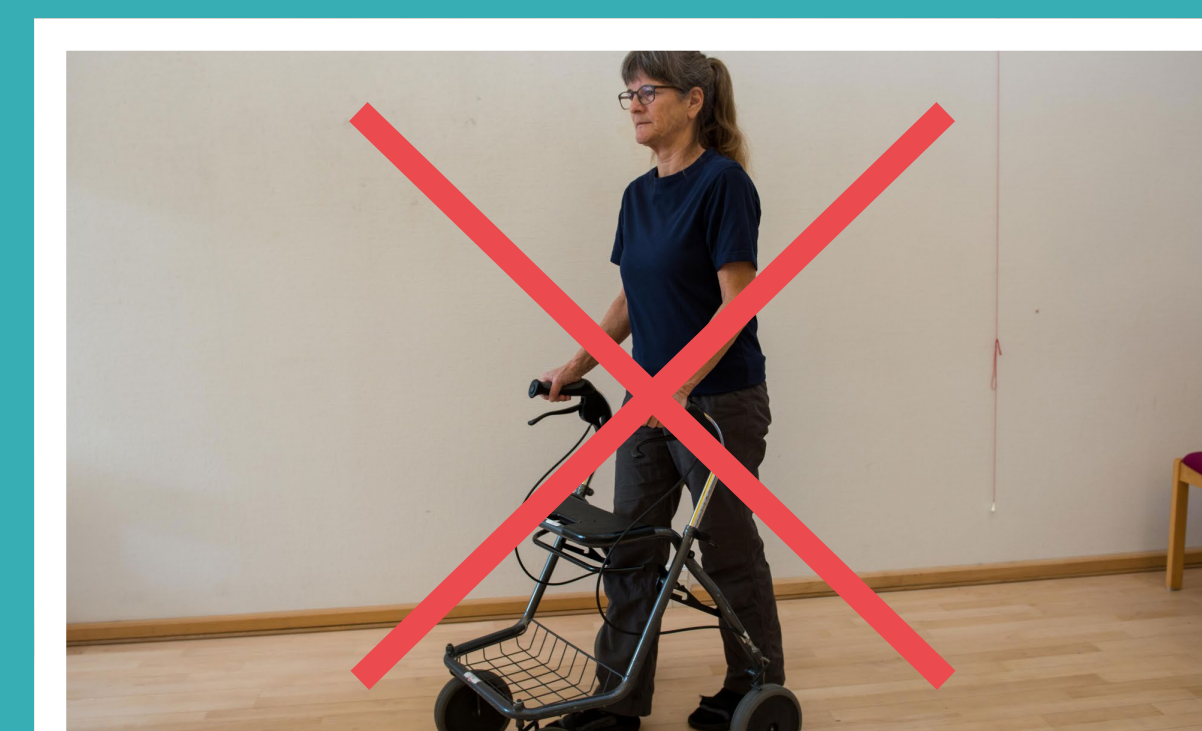
**Crude predictors of inability to perform CAS. Estimates are presented with odds ratios and 95% CI. (N = 235).**



Age in years	1.11 (1.02-1.20), p=0.02
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Age in years	1.10 (1.02-1.18), p=0.01
Dependent PFS	3.42 (1.01-11.58), p=0.05



Age in years	0.92 (0.89-0.95), p<0.01
LOS in days	1.90 (1.05-3.44), p=0.03
TTS >48 hours	1.12 (1.00-1.25), p=0.04
Dependent PFS	0.46 (0.25-0.91), p=0.03

## CONCLUSION

Elderly patients with comorbidities who were not independent in basic mobility before hip fracture are at risk of not being able to perform activities of basic mobility at discharge and should receive extra attention in rehabilitation.