

LONGITUDINAL ANALYSIS OF THE RELATIONSHIP BETWEEN PHYSICAL FUNCTION AND MORTALITY IN AMBULATORY OLDER MEN

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INTRODUCTION

Low physical performance is an important characteristic of frailty and sarcopenia.

Aim:

To assess and compare the predictive value of physical function measurements for all-cause mortality in older men.

METHODS

- Longitudinal study (1996 – 2011) of a population-based sample of 352 ambulatory, older men aged 71 to 86 at study baseline.
- The Rapid disability rating scale-2, 36-Item short form health survey, Hand grip strength, Five times sit-to-stand test, Standing balance, and Timed Up and Go test were determined at baseline.
- Follow-up exceeded 15 years.**
- Associations with all-cause mortality were assessed using Cox proportional hazard analyses. Age, BMI, smoking status, education, physical activity, and cognitive status were included as confounders.

RESULTS

Table 1. Characteristics (N = 352)

Age, mean ± SD	78.0 ± 4.2 years
Rapid disability rating scale-2 ADL	8.7 ± 1.9
36-Item short form health survey PFI	73 ± 24
Grip strength	24.3 ± 7.9 kg
Standing balance	5 ± 1
Five times sit-to-stand test	13.8 ± 4.7 seconds
Timed Up and Go, mean ± SD	12.2 ± 4.7 seconds
Survival time, median	110 months
Mortality rate	78 % (273 / 352)

ADL = activities of daily living; PFI = physical function index

Figure 1. Age-adjusted survival curve

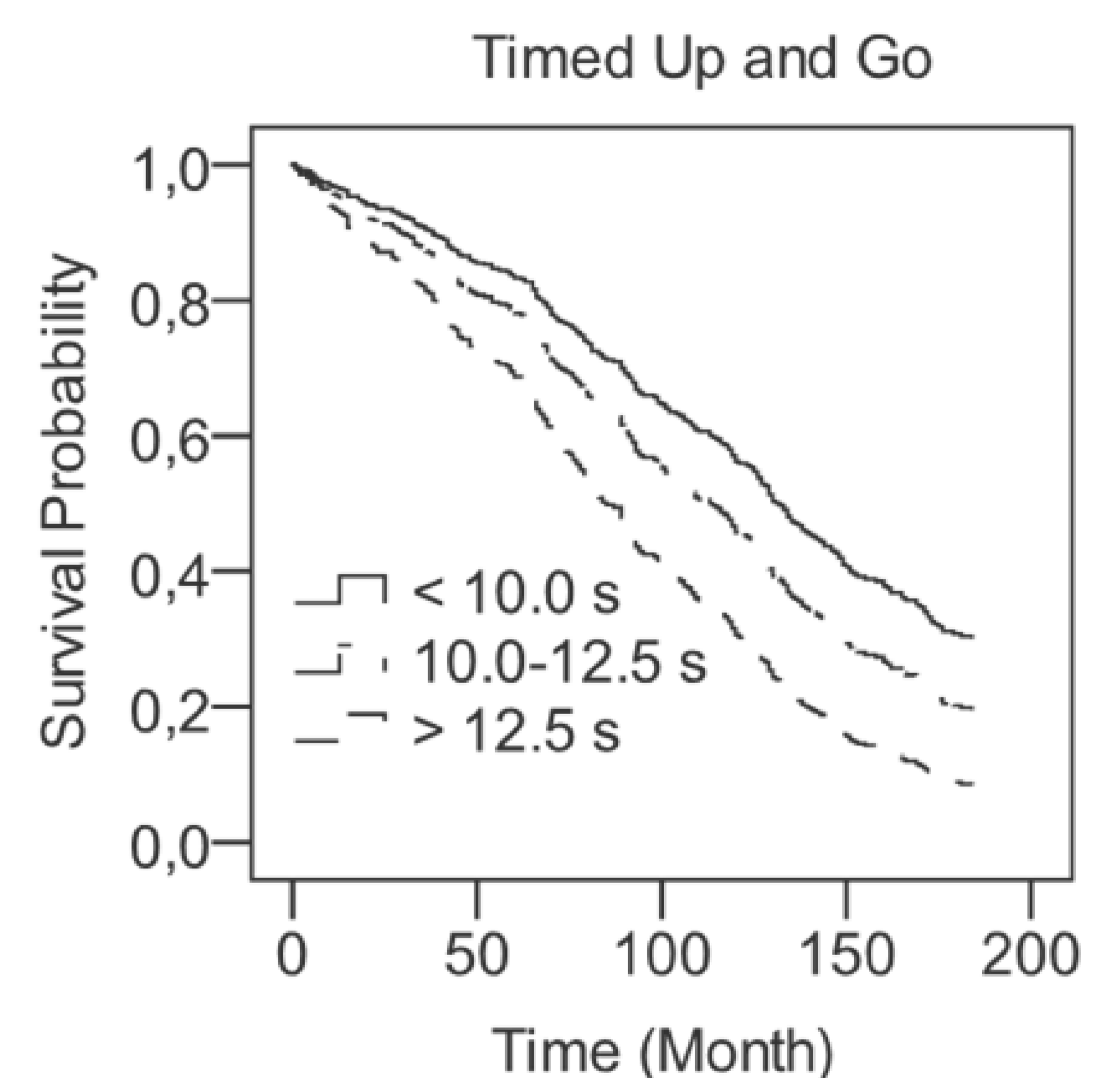


Table 2. Hazard ratios for total mortality of physical function measurements (per standard deviation increase)

Characteristic	Model 1 ^a			Model 2 ^b		
	HR (95% CI)	P	Chi ²	HR (95% CI)	P	Chi ²
RDRS-2 ADL	1.37 (1.24-1.52)	< 0.001	105	1.19 (1.03-1.37)	0.016	77
SF-36 PFI	0.71 (0.63-0.79)	< 0.001	97	0.83 (0.71-0.97)	0.020	73
Grip strength	0.80 (0.70-0.91)	0.001	70	0.85 (0.74-0.99)	0.031	74
Standing balance	0.87 (0.78-0.98)	0.020	67	0.90 (0.78-1.05)	0.186	71
Five times sit-to-stand	1.46 (1.28-1.65)	< 0.001	99	1.30 (1.10-1.52)	0.002	79
Timed Up and Go	1.54 (1.37-1.74)	< 0.001	123	1.40 (1.19-1.66)	< 0.001	98

^a Adjusted for age

^b Additionally adjusted for body mass index, smoking status, education, physical activity, and cognitive status

RDRS-2 = rapid disability rating scale-2; ADL = activities of daily living; SF-36 = 36-item short form health survey; PFI = physical function index

CONCLUSIONS

Our findings demonstrate that physical function measurements are important in the evaluation of older persons.

We encourage the use of the Timed Up and Go test as a reliable, quick and feasible screening tool in clinical settings.