PERSISTENT DECLINE IN PHYSICAL FUNCTION OVER 3 YEARS PREDICTS 15-YEAR MORTALITY IN AMBULATORY OLDER MEN

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BACKGROUND

Physical function, measured at a single point in time, can predict important adverse outcomes in older persons.

De Buyser SL et al; Eur J Clin Invest 2013; 43 (4): 379-386

Little is known about the predictive value of longitudinal changes in measures of health and function.

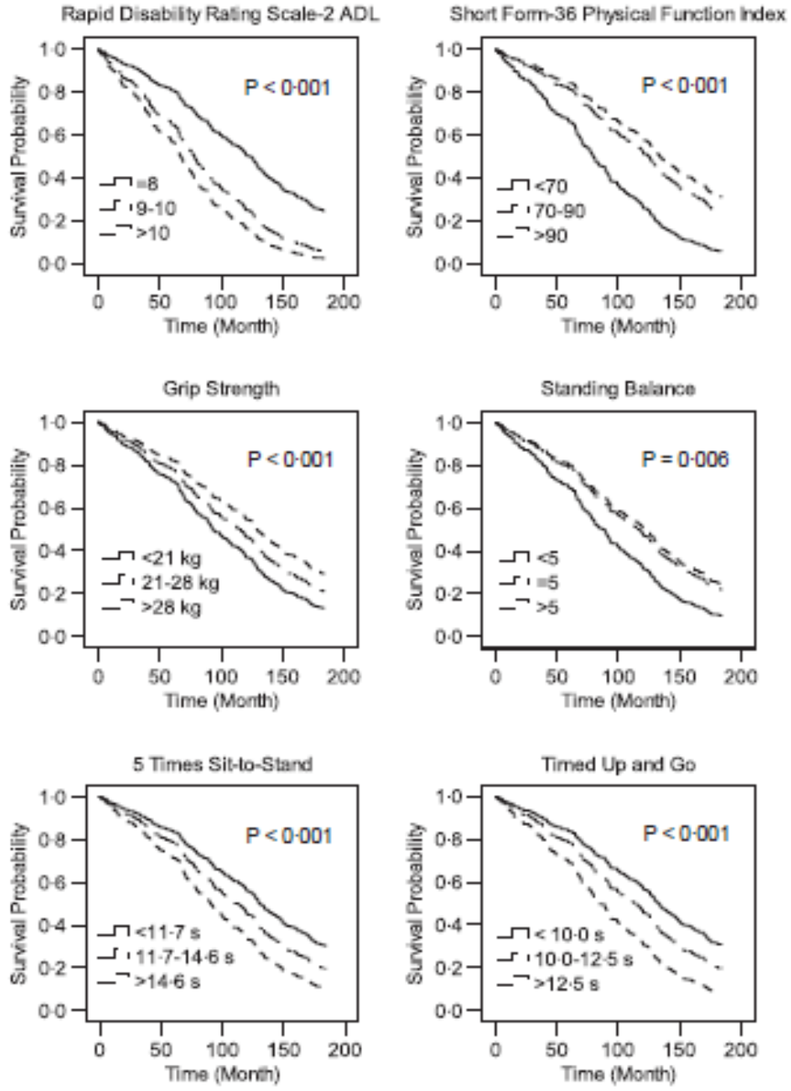


Figure 1 Age-adjusted survival curves according to tertiles of physical functioning (For the Rapid disability rating scale-2 questions on activities of daily living, three unequal groups had to be made) *P*-values indicate significant differences in survival probability between best and worst functioning subjects. Survival curves diverge further with follow-up. ADL, activities of daily living.

EUGMS
European Union Geriatric Medicine Society

AIM

To evaluate

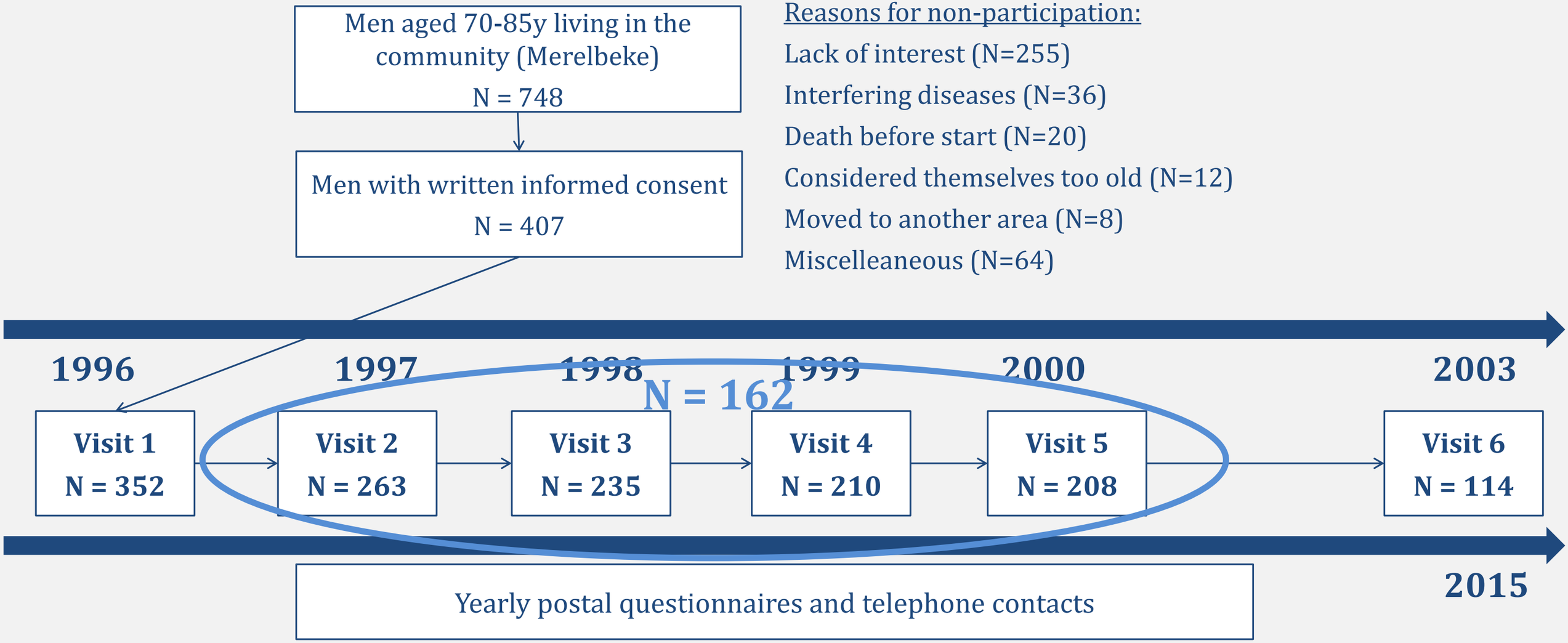
the effect of **decline patterns over three years** from baseline

in seven measures of **health and physical function**

on subsequent **15-year mortality**

in older community-dwelling men.

COMMUNITY-BASED, OBSERVATIONAL, COHORT STUDY



Decline in seven measures of health and function

Measure		Decline from baseline
Timed Up and Go (sec)	*Podsiadlo & Richardson 1991*	2 sec (80th percentile)
Chair Rise (sec)	*Bohannon 1995*	1 sec (80th percentile)
Grip Strength (kg)	*Innes 1999*	6 kg *(Nitschke 1999)*
Balance (0 – 6)	*Guralnik 1994*	1 point (80th percentile)
Physical Function Index (0 – 100) (Short Form-36)	*Hays 1998; Bohannon 2010*	20 points (80th percentile)
General Health (0 – 100) (Short Form-36)	*Hays 1998*	15 points (80th percentile)
Activities of Daily living (8 – 32) (Rapid Disability Rating Scale 2)	*Linn 1982*	2 points (90th percentile)

DECLINE PATTERNS

1997 1998 1999 2000 2015

Timed Up and Go ↓2s
Chair Rise ↓1s
Grip Strength ↓6kg
Balance ↓1p
SF-36 Physical Function Index ↓20p
SF-36 General Health ↓15p
RDRS-2 ADL ↓2p

Decline from baseline was assessed annually over three years.

Decline was considered persistent or transient based on whether the decline was still present at the end of year three.

AND / OR

AND

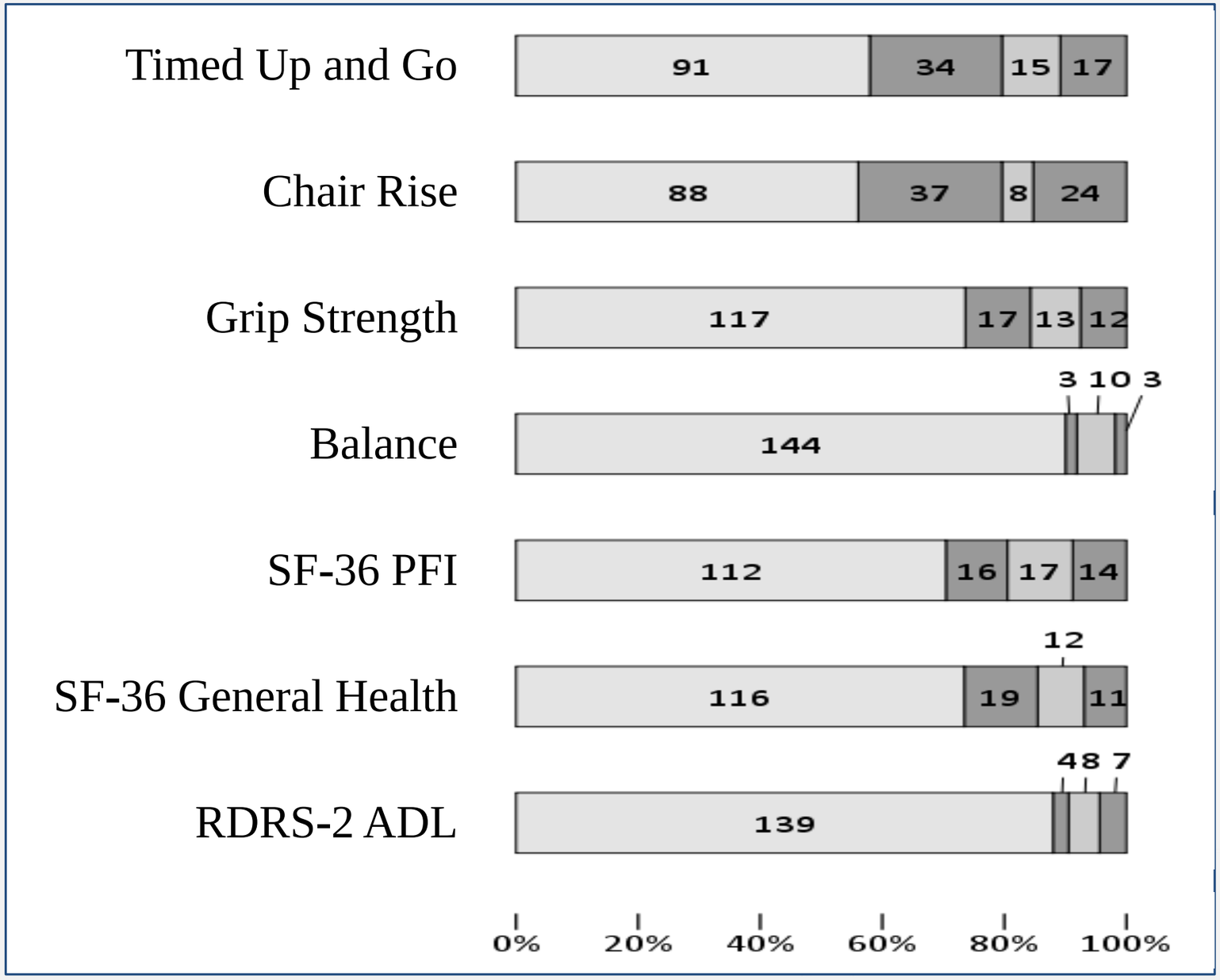
[illegible] year

All-cause mortality

DESCRIPTIVES, N=162

Baseline variables	**Median (IQR)**
Age (years)	74.5 (73.0 – 77.0)
Timed Up and Go (sec)	10.5 (9.0 – 12.3)
Chair Rise (sec)	10.8 (9.5 – 12.4)
Grip Strength (kg)	31 (26 – 36)
Balance (0 – 6)	5 (5 – 6)
Physical Function Index (0 – 100) (Short Form-36)	85 (75 – 95)
General Health (0 – 100) (Short Form-36)	65 (55 – 80)
Activities of Daily living (8 – 32) (RDRS-2)	8 (8 – 8)
Outcome variables	**Median (IQR)**
Deaths after 15y of follow-up, N (%)	141 (87%)
Survival time (years)	8.25 (4.25 – 12.42)

DECLINE PATTERNS IN AMBULATORY OLDER MEN



No decline

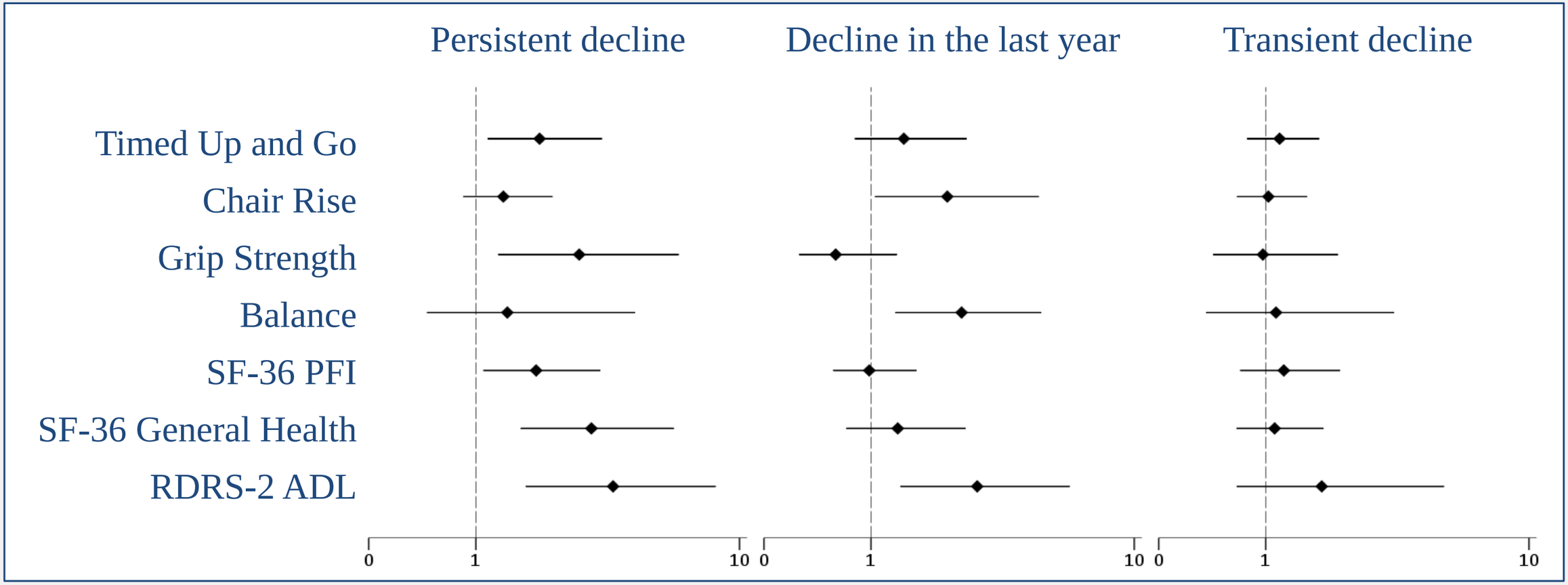
Decline in the last year

Transient decline

Persistent decline

Effects of decline patterns on subsequent 15-year mortality in ambulatory older men

Age and baseline adjusted hazard ratios with 95% CI from cox regression models predicting all-cause mortality



CONCLUSION

- Persistent decline, but not transient decline in health and physical function affects mortality risk in ambulatory older men.
- Longitudinal assessment of health and physical function adds value to the prediction of all-cause mortality compared to single time point assessment at baseline.

Take home message:

- Our results encourage annual assessment of health and physical function.