

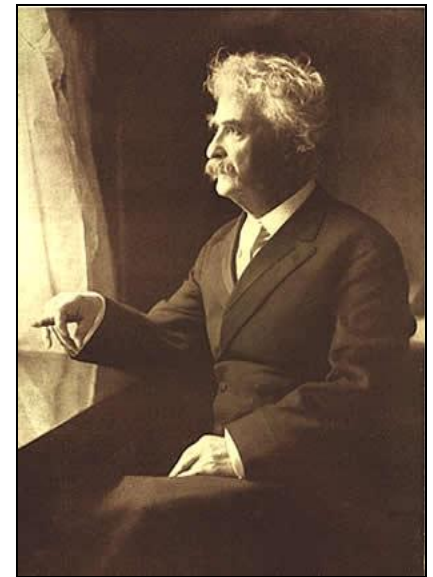
Does midlife work ability predict later life functional ability?

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Why focus on midlife work ability and old age disability?

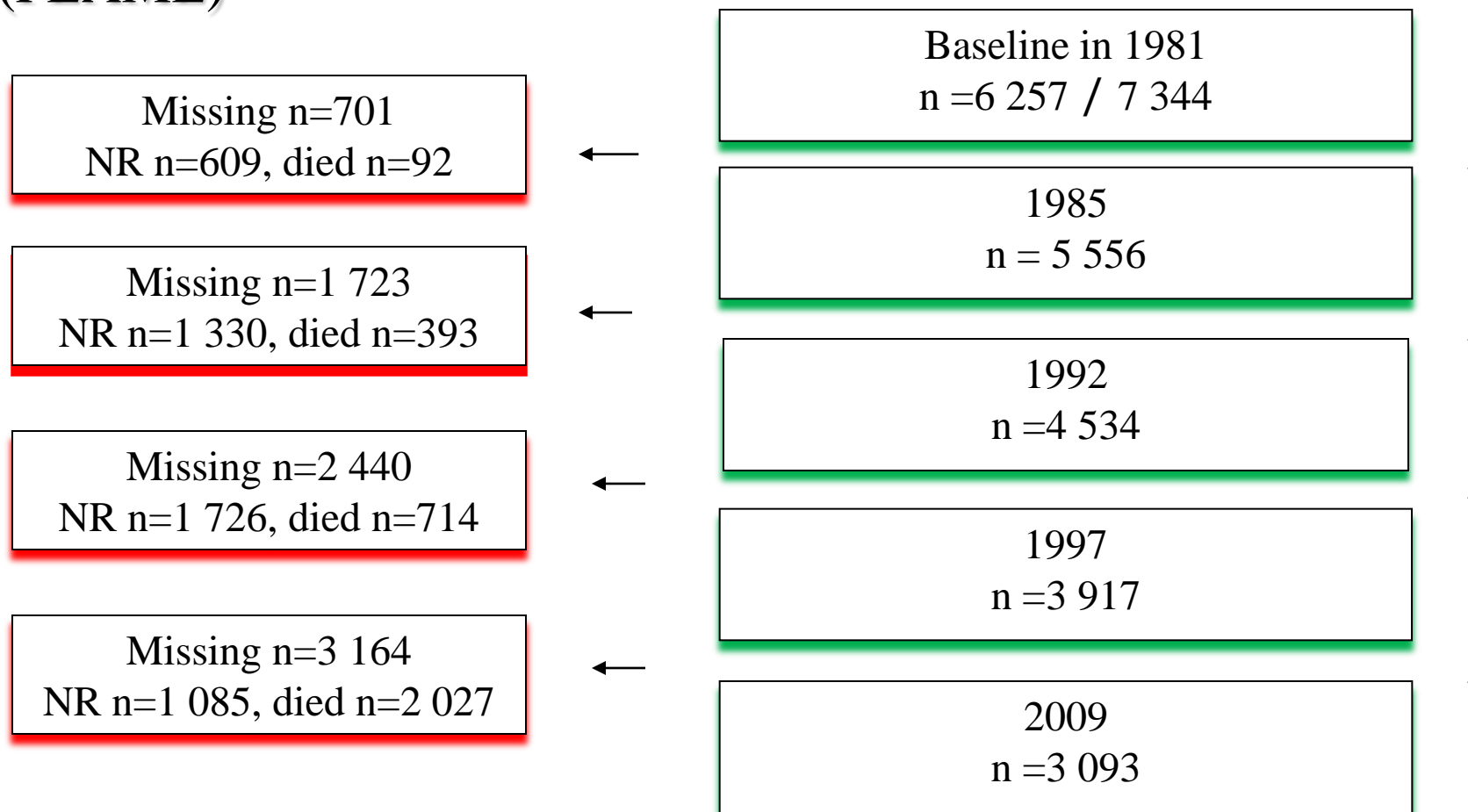


- **Baby boom generation retire within next decade**
- **What are the effects on wellbeing and service use?**
- **Employees exiting work force have outnumbered those entering**
- **Work ability is a balance between resources and demands**
- **Lifetime occupation predicts disability**
- **Long-term effects of work ability promotion**



Finnish Longitudinal Study on Municipal Employees

(FLAME)



^ Municipal employees born between 1923-1937

^ 2 863 (45.8%) participated in all waves

Work ability model

Society culture legislation education policy social and health policy

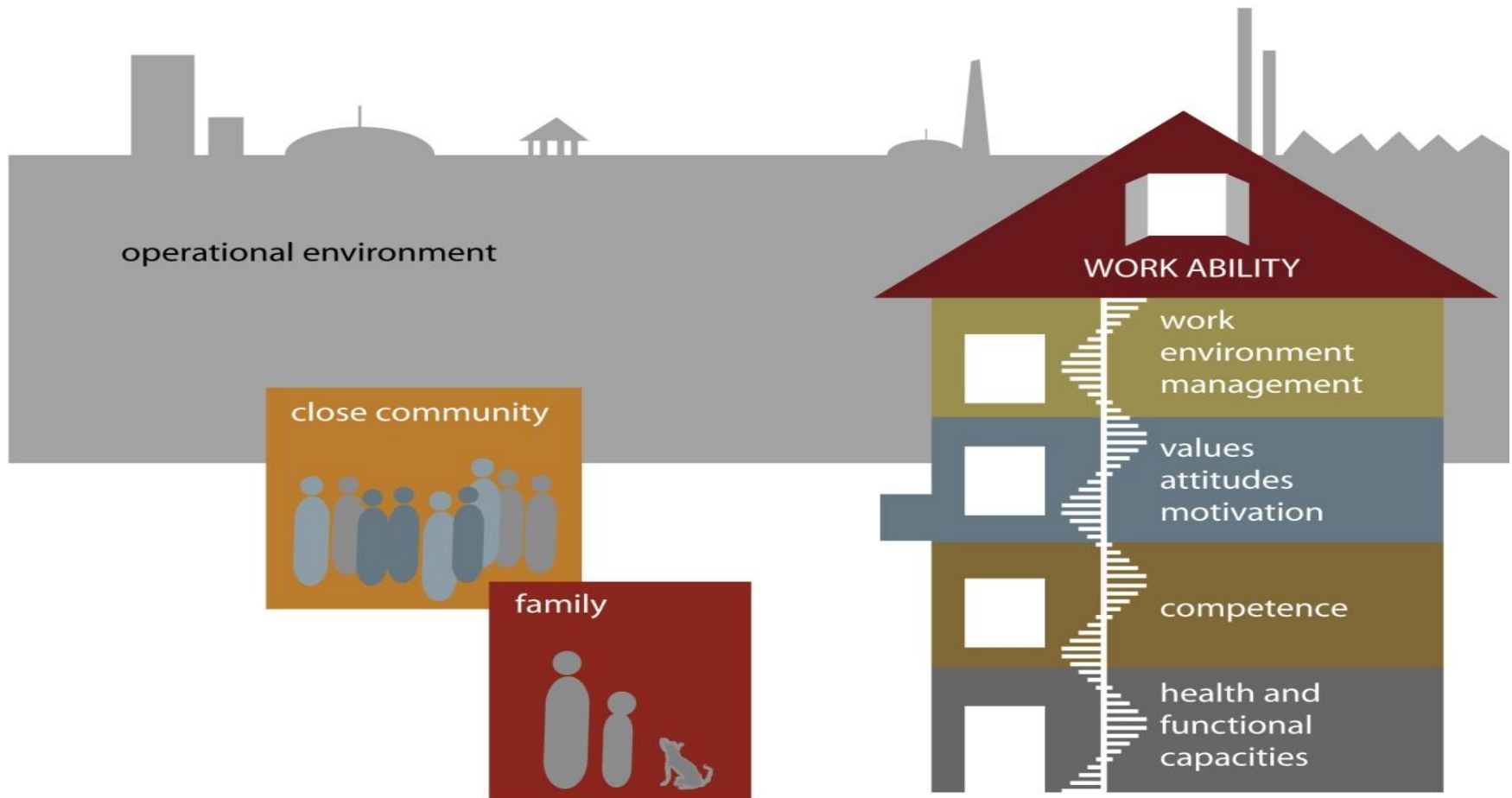


Figure 6.2. Explanatory power of the regression models (R^2) for the work ability index among 30- to 64-year-olds.

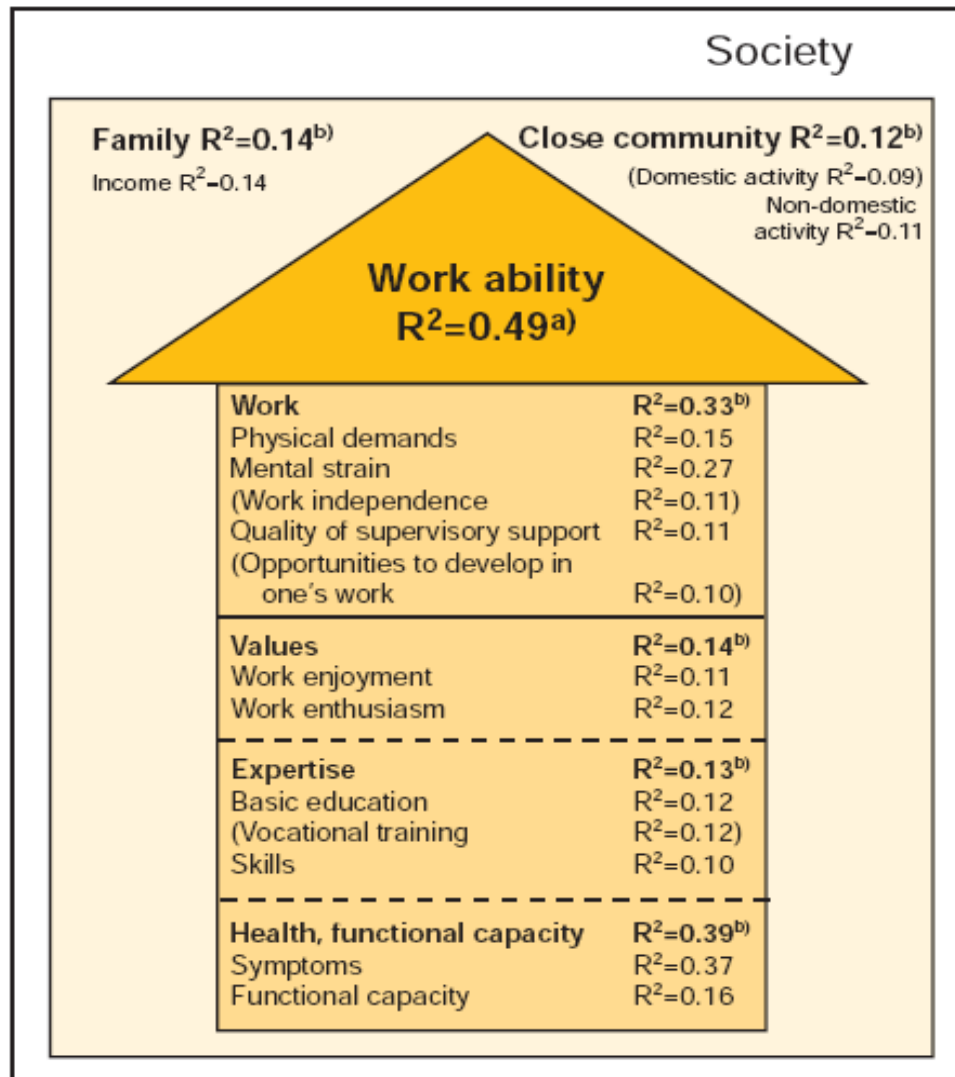
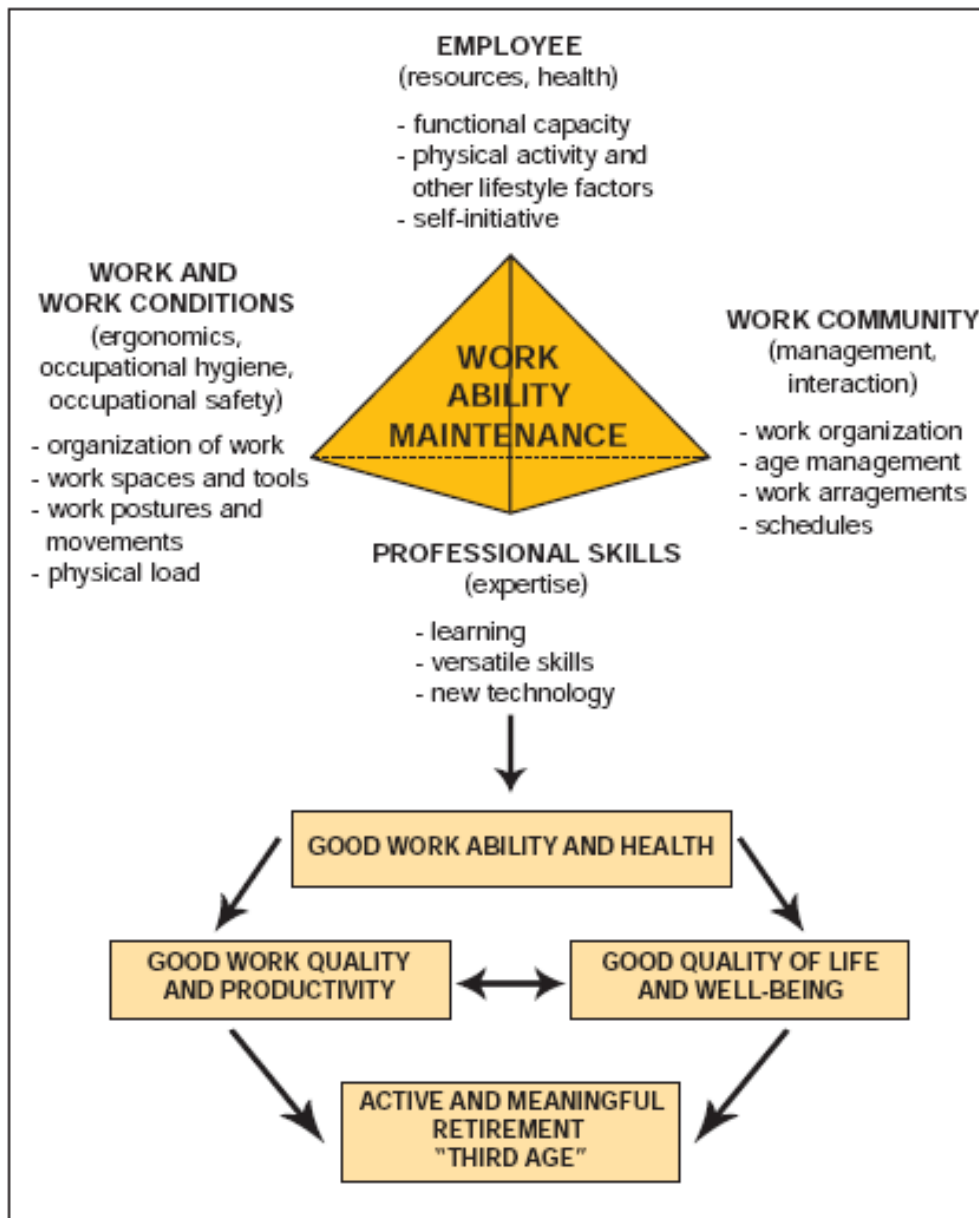


Figure 2.2. Tetraedric model for promoting work ability.



Work ability index

1. *Current work ability compared with the lifetime best* comprises the work ability score that is often used as a separate indicator of work ability and has been described above (0–10 points).
2. *Work ability in relation to the demands of the job* (2–10 points).
3. *Number of current diseases diagnosed by a physician* (1–7 points).
4. *Estimated work impairment due to diseases* (1–6 points).
5. *Sick leave during the past year* (1–5 points).
6. *Own prognosis of work ability two years from now* (1, 4 or 7 points).
7. *Mental resources* (1–4 points).

Poor 7-27

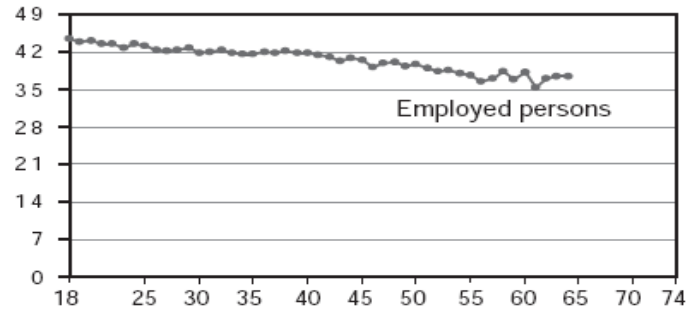
Moderate 28-36

Good 37-43

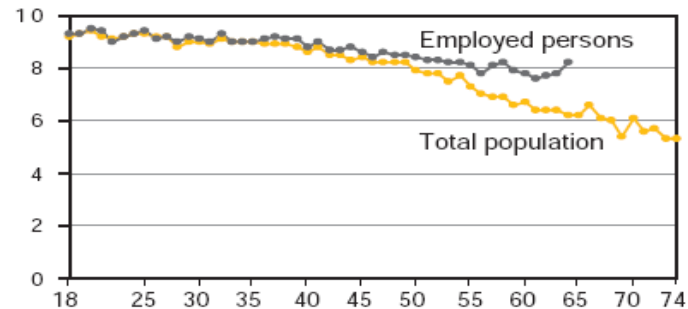
Excellent 44-49

Work ability and age

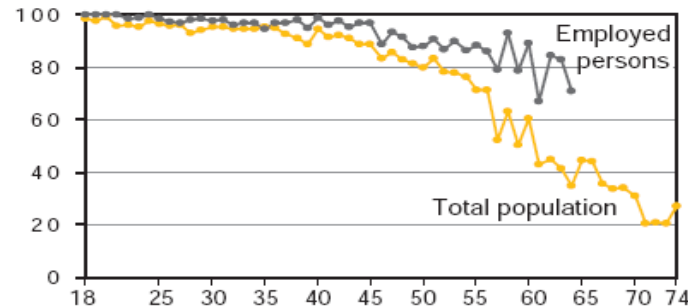
a) Work ability index



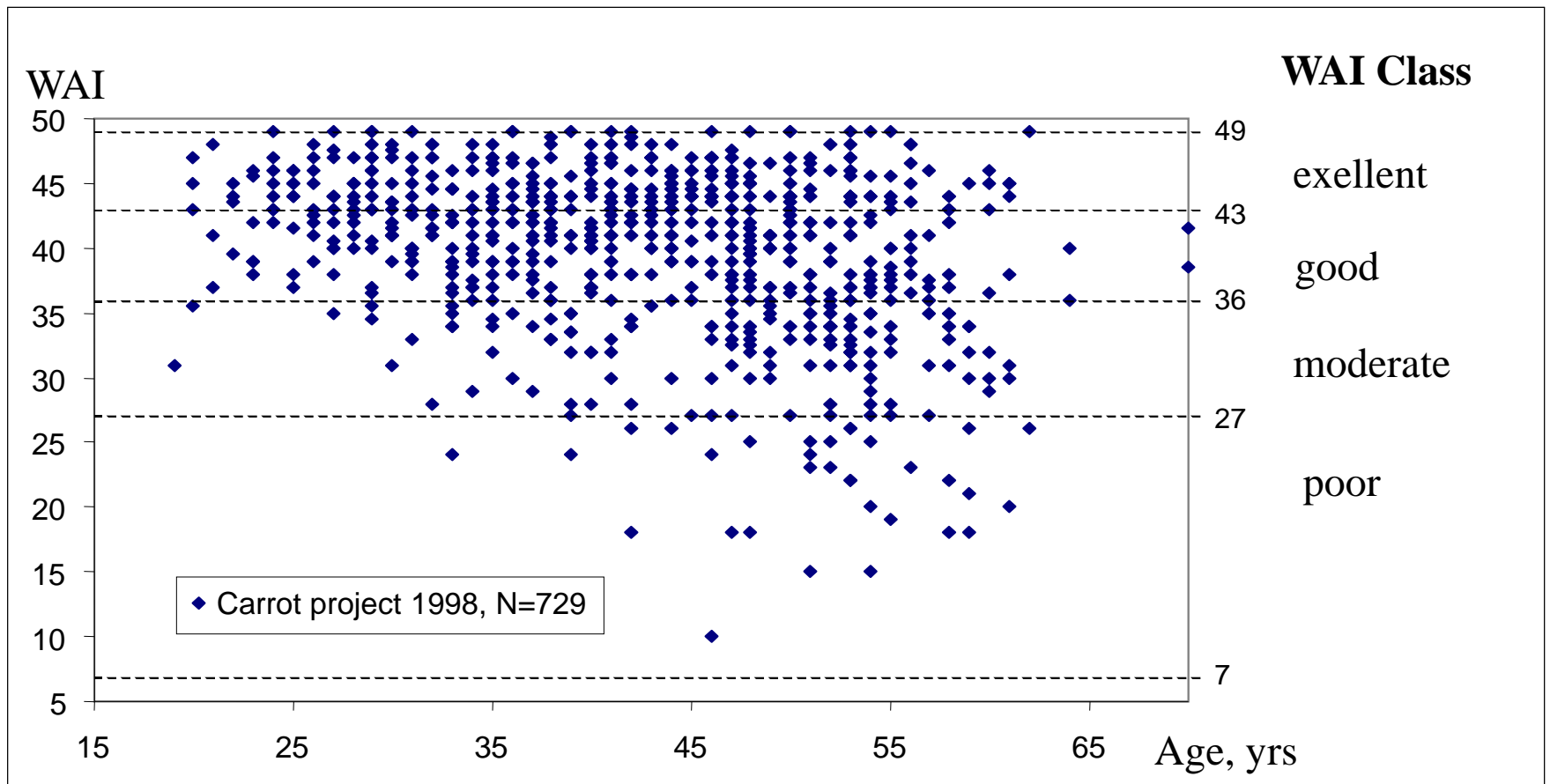
b) Work ability score



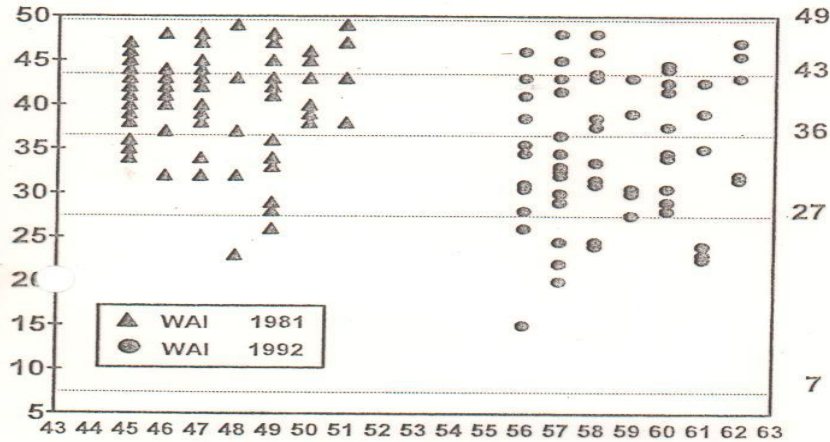
c) Proportion of people with full work ability, %



Individual work ability variation larger with increasing age

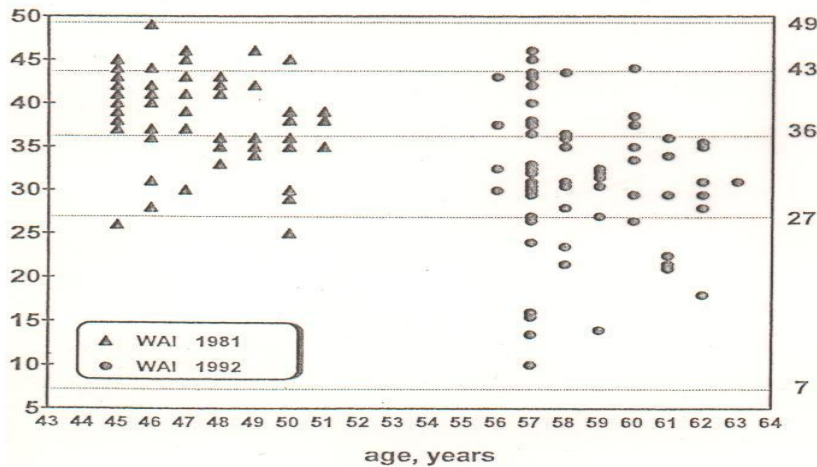


OFFICE WORK
women (n=86)
WAI



Large differences in work ability
In same occupations

INSTALLATION WORK
men (n=62)
work ability index, scores



Ilmarinen et al. 1997

Poor work ability predicts disability pension and death

11.

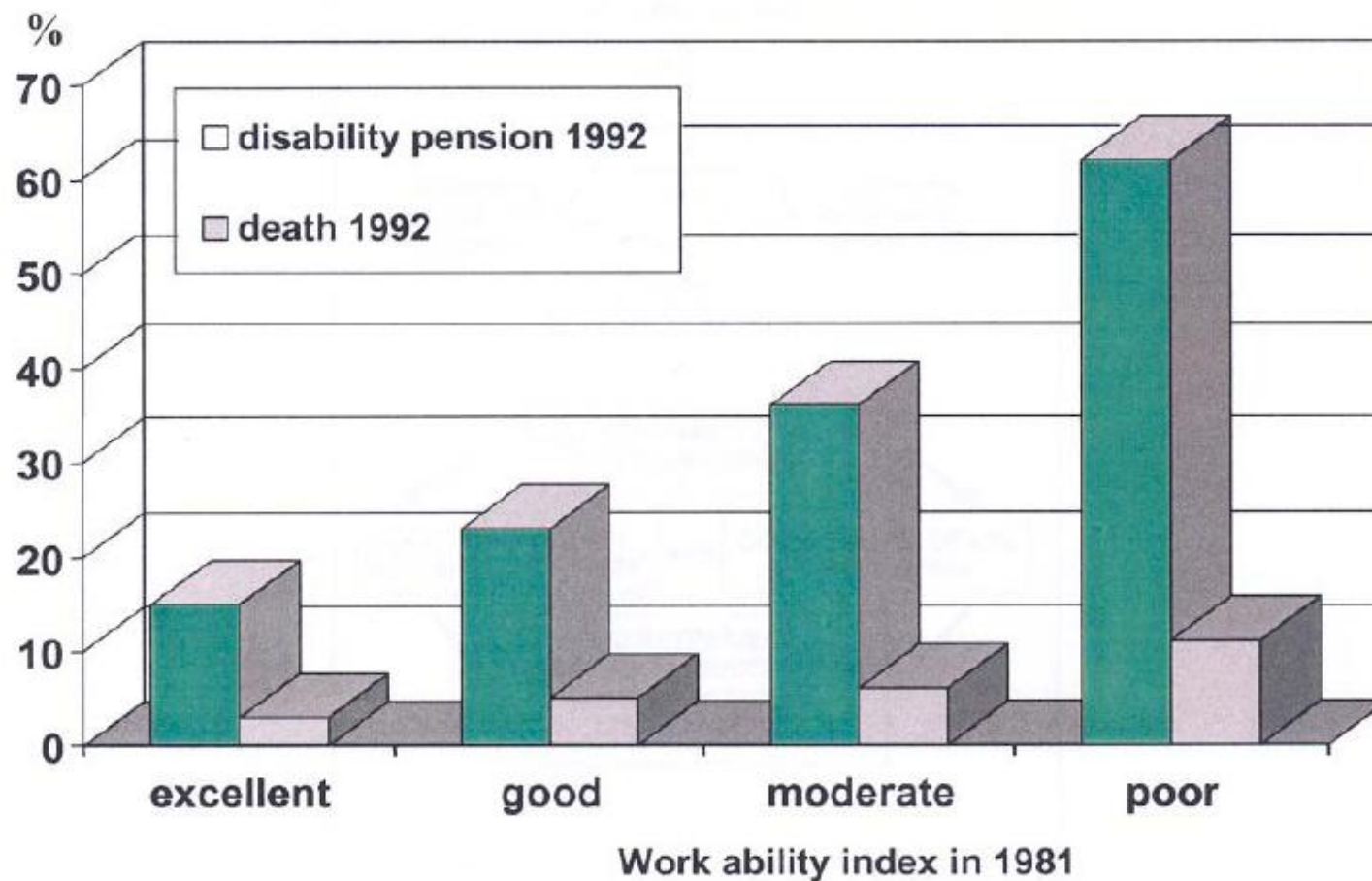


Table 63. Model of work and life-style factors associated with an improvement in work ability^a (n = 555) - odds ratios (OR) and 95 % confidence intervals (95 % CI) of the logistic regression model (Tuomi et al. 1997)

variable	OR	95 % CI
repetitive movements ^b		
not decreased	1.0	
decreased	2.1	1.0-3.4
satisfaction with supervisor's attitudes ^b		
not increased	1.0	
increased	3.6	1.8-7.2
vigorous physical exercise in leisure time ^b		
not increased	1.0	
increased	1.8	1.0-3.5

^athe score in the work ability index had improved at least three points from 1981 to 1992

^bchange from 1981 to 1992

Table 64. Model of work and life-style factors associated with a decline in work ability^a (n = 805) - odds ratios (OR) and 95 % confidence intervals (95 % CI) of the logistic regression model (Tuomi et al. 1997)

variable	OR	95 % CI
standing in one place ^b		
not increased	1	
increased	1.7	1.0-2.9
satisfaction with workrooms ^b		
not decreased	1.0	
decreased	1.6	1.0-2.6
possibility for recognition and esteem at work ^b		
not decreased	1.0	
decreased	2.4	1.4-4.3
vigorous physical exercise in leisure time ^b		
not decreased	1.0	
decreased	1.8	1.2-2.8

^athe score in the work ability index had fallen by at least 10 points from 1981 to 1992

^bchange from 1981 to 1992

Work ability in midlife as a predictor of mortality and disability in later life: a 28-year prospective follow-up study

Mikaela B. von Bonsdorff PhD, Jorma Seitsamo PhD, Juhani Ilmarinen PhD, Clas-Håkan Nygård PhD, Monika E. von Bonsdorff PhD, Taina Rantanen PhD

ABSTRACT

Background: Poor work ability correlates with increased morbidity and early retirement from the workforce, but the association in old age is not known. We investigated work ability in midlife among white-collar and blue-collar employees as a predictor of mortality and disability 28 years later.

Methods: A total of 5971 occupationally active people aged 44–58 years participated in the Finnish Longitudinal Study of Municipal Employees (FLAME) in 1981. Perceived work ability relative to lifetime best was categorized as excellent, moderate or poor. In 2009, the ability to perform activities of daily living was assessed among 2879 respondents (71.0% of the survivors). Mortality data were available up to July 2009.

Results: At the 28-year follow-up, 1918 of the 5971 participants had died and 1403 had some form of disability. Rates of death per 1000 person-years among white-collar men were 7.7 for those with excellent work ability, 14.7 for those with moderate work ability and

23.5 for those with poor work ability. Among blue-collar men, the corresponding rates were 15.5, 20.2 and 25.3. In women, rates ranged between 6.3 and 10.6 per 1000 person-years. The age-adjusted hazard ratios (HRs) for mortality were two to three times higher among blue-collar male employees with lower work ability than among white-collar male employees with excellent work ability in midlife (i.e., the reference group). The odds of death or disability at follow-up compared with white-collar workers with excellent work ability were highest among blue-collar employees with poor work ability in midlife (odds ratio [OR] 4.56, 95% confidence interval [CI] 2.82–7.37 for men; OR 3.37, 95% CI 2.28–4.98 for women). Among the survivors, similar but slightly lower risks of disability 28 years later were found.

Interpretation: Perceived poor work ability in midlife was associated with accelerated deterioration in health and functioning and remains evident after 28 years of follow-up.

Competing interests: None declared.

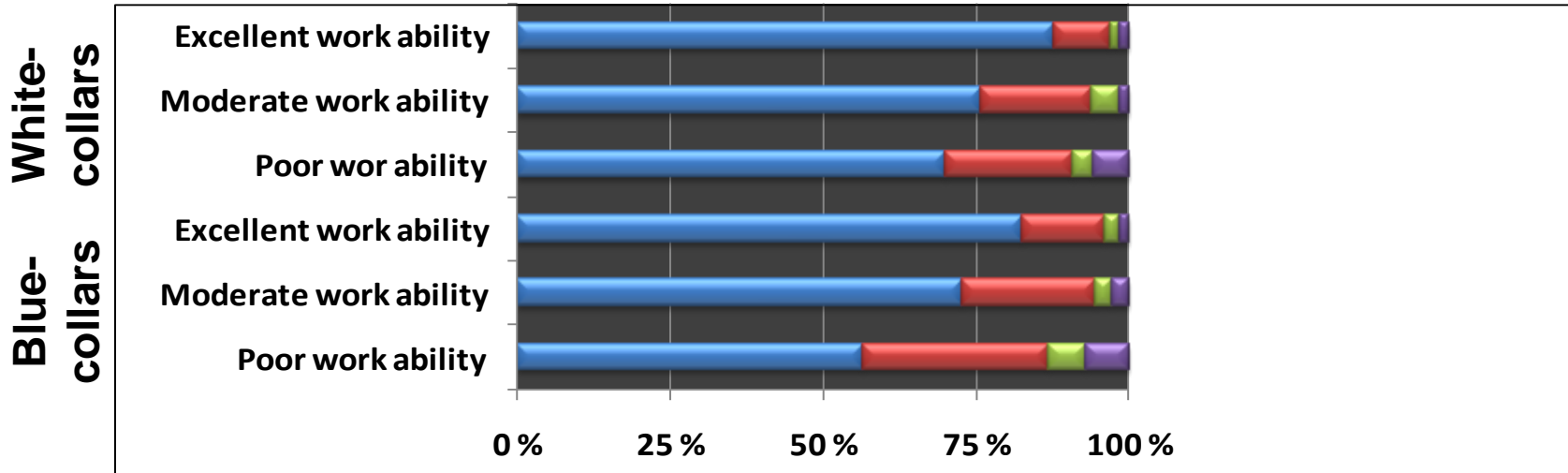
This article has been peer reviewed.

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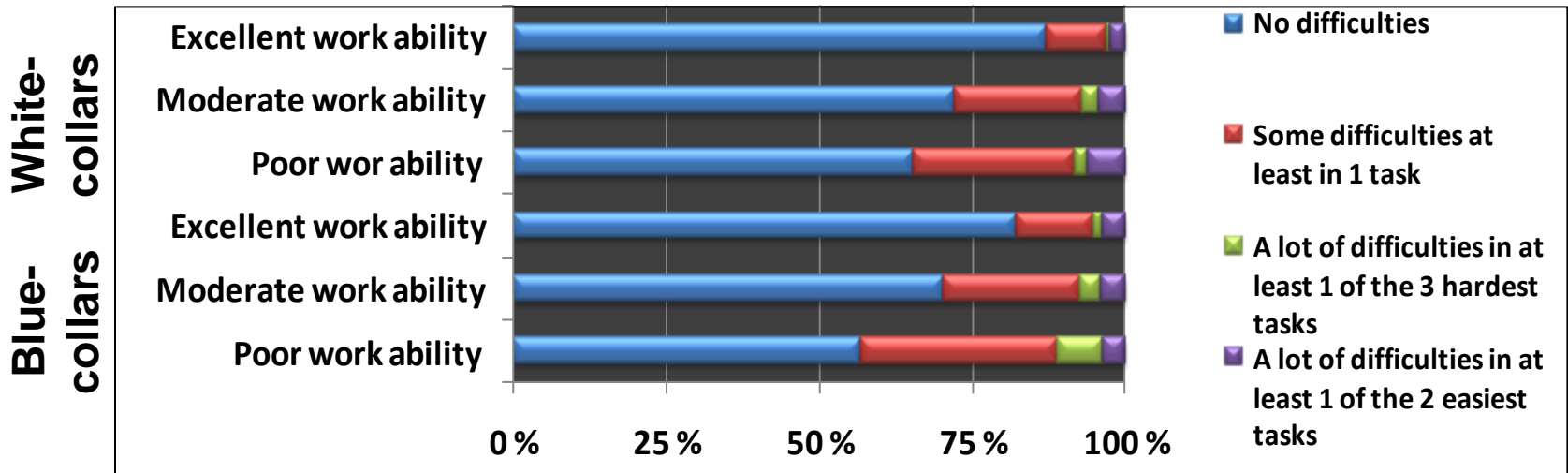
CMAJ 2011. DOI:10.1503/cmaj.100713

ADL disability at follow-up in 2009
according to professional class and work ability in midlife in the
year 1981

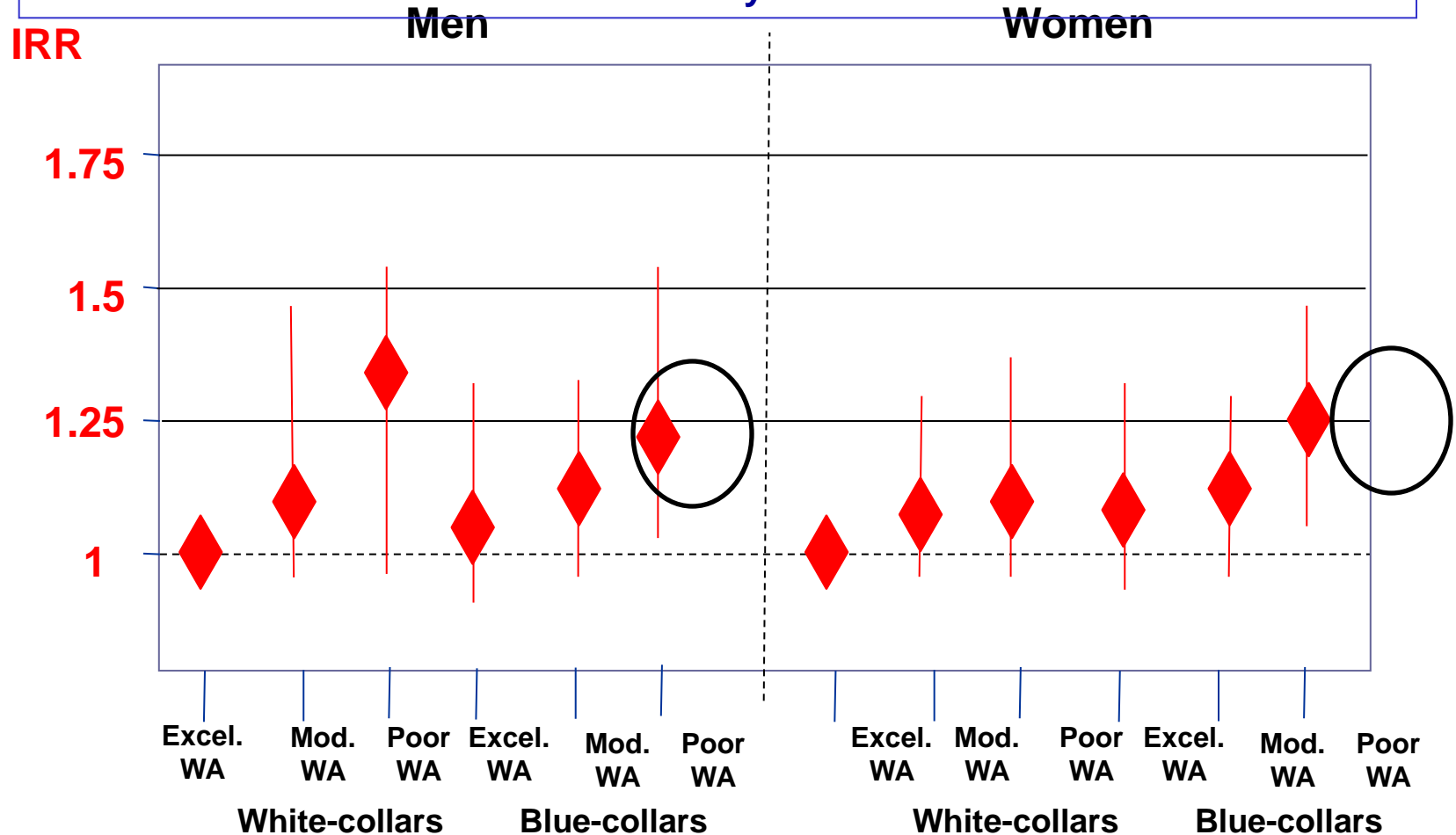
Women



Men

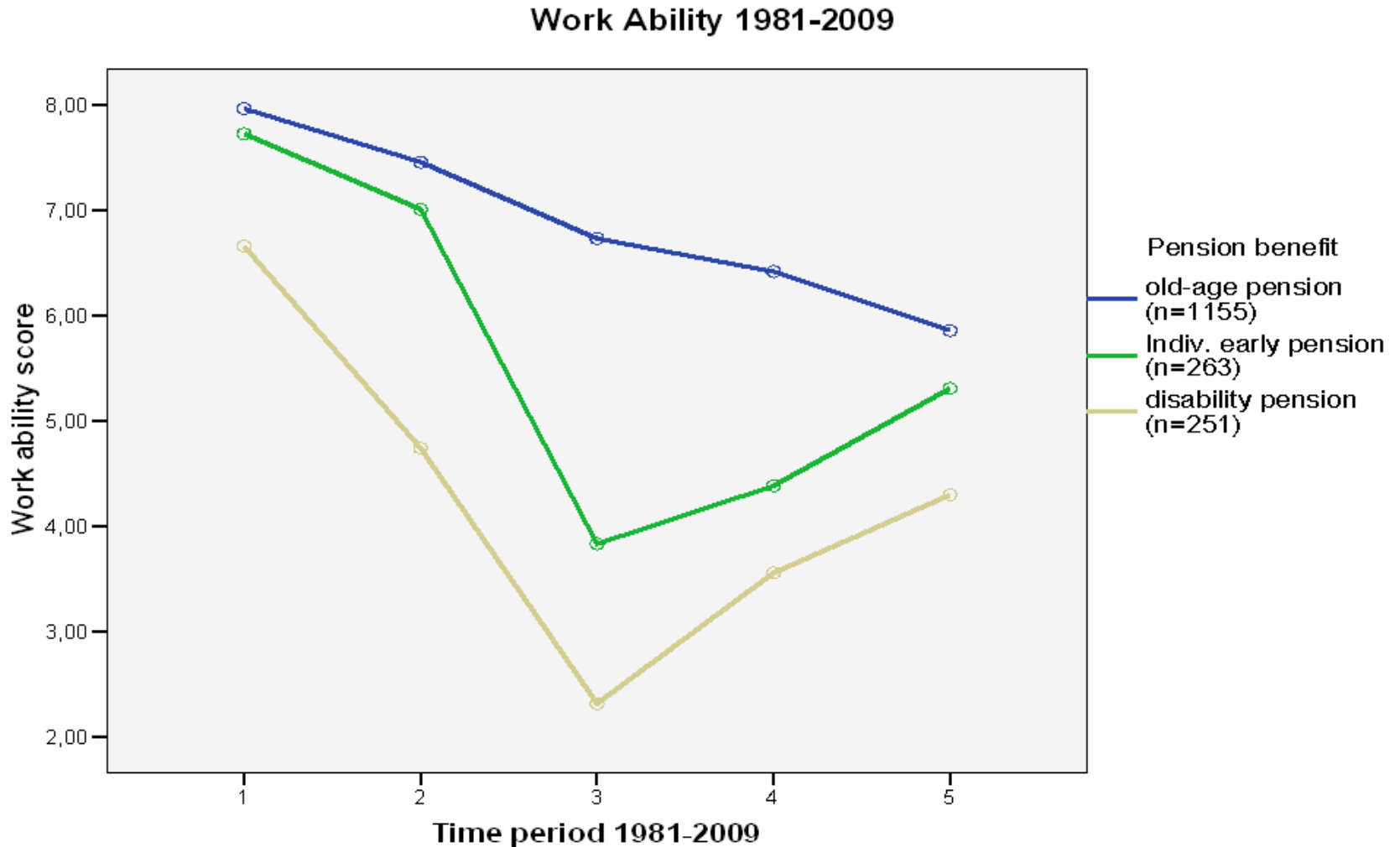


Risk for ADL disability according to midlife professional group and work ability*

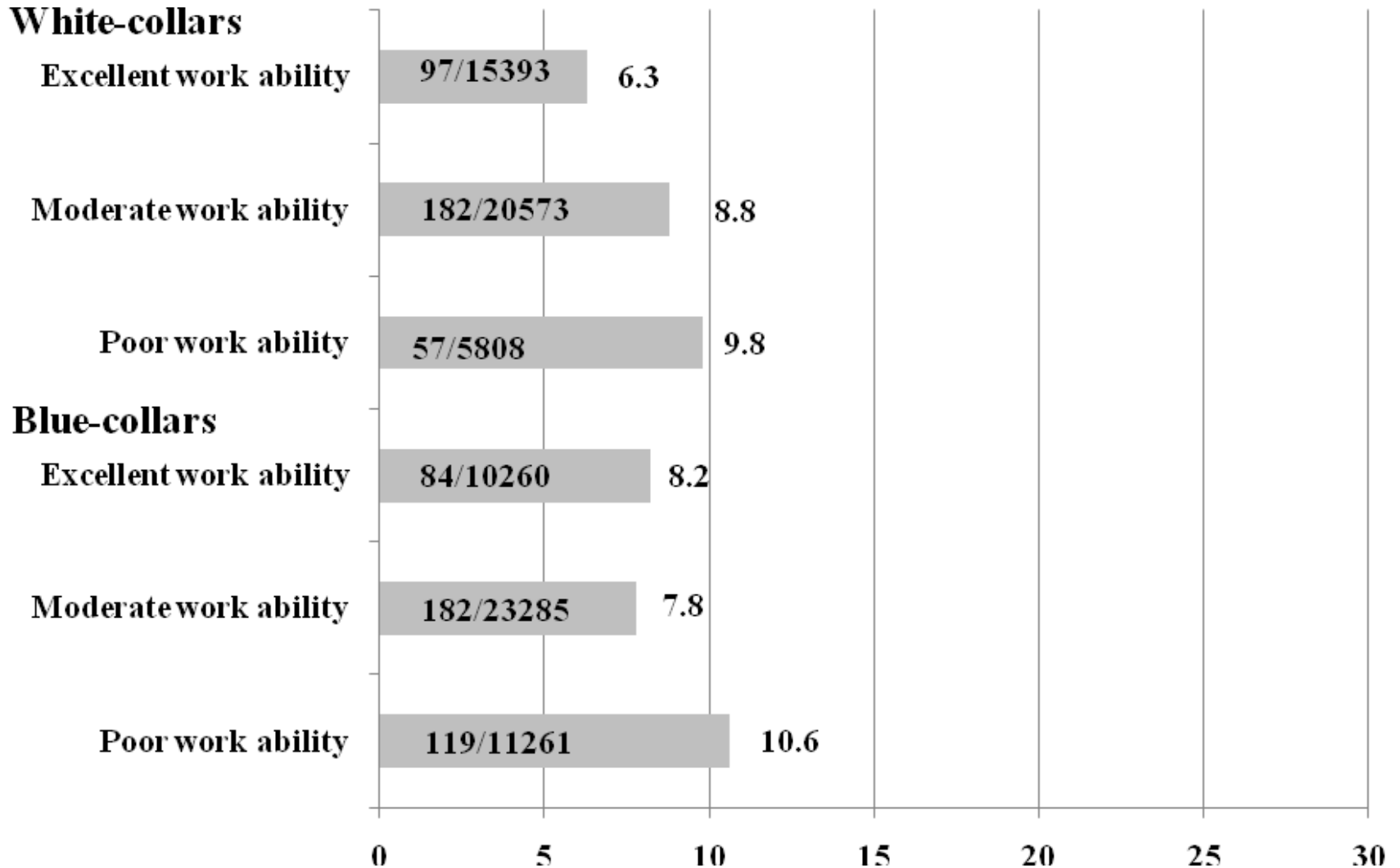


*adjusted for age+marital status+alcohol intake+smoking+exercise+main chronic diseases

Work ability changes according to pension benefit 1981-2009



Mortality rates per 1000 person-years, women



(von Bonsdorff MB et al. 2009 CMAJ)

Mortality rates per 1000 person-years, men

White-collar

Excellent work ability

51/6663

7.7

Moderate work ability

153/10383

14.7

Poor work ability

73/3107

23.5

Blue-collar

Excellent work ability

131/8463

15.5

Moderate work ability

458/22644

20.2

Poor work ability

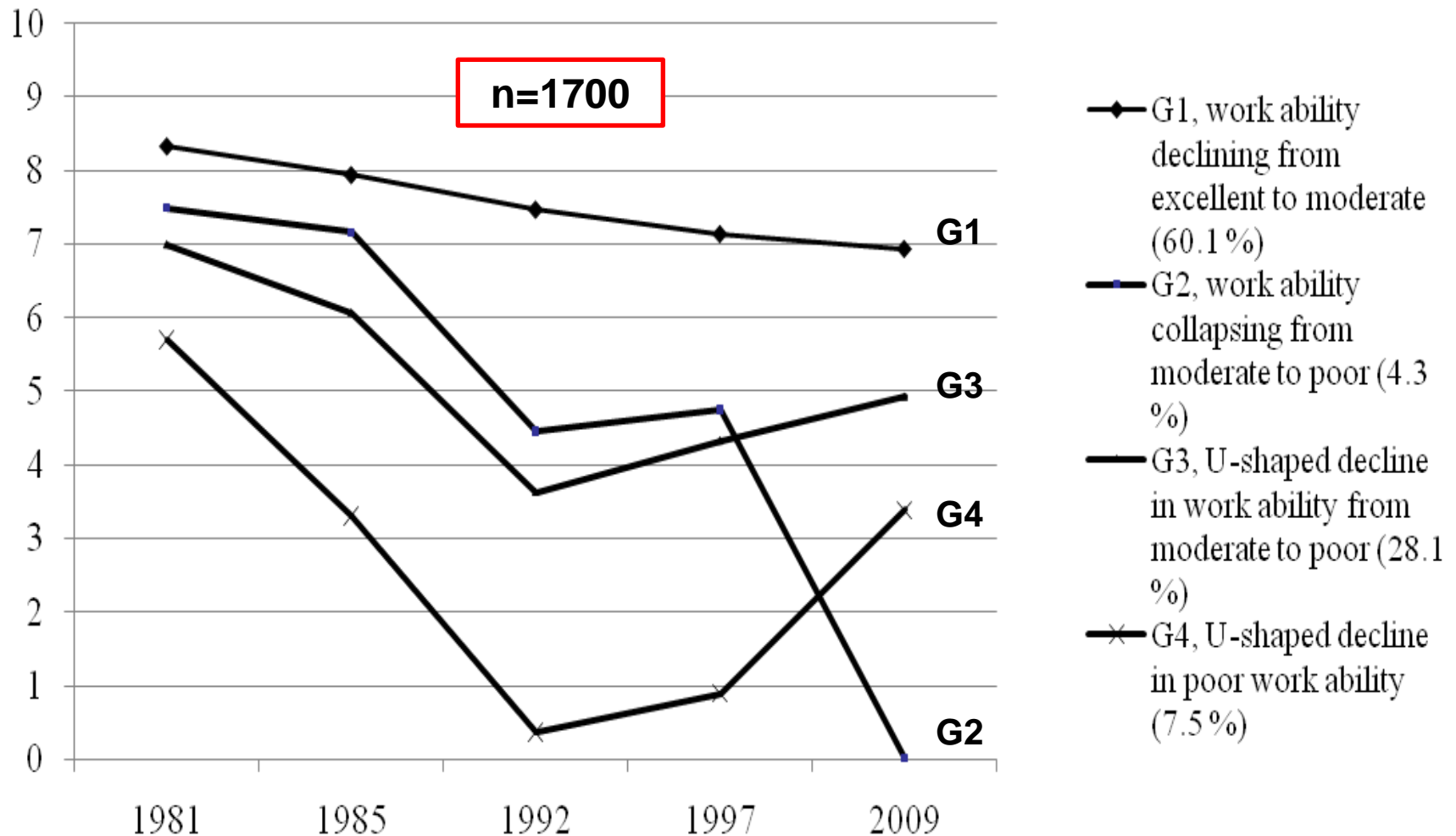
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25.3

0 5 10 15 20 25 30

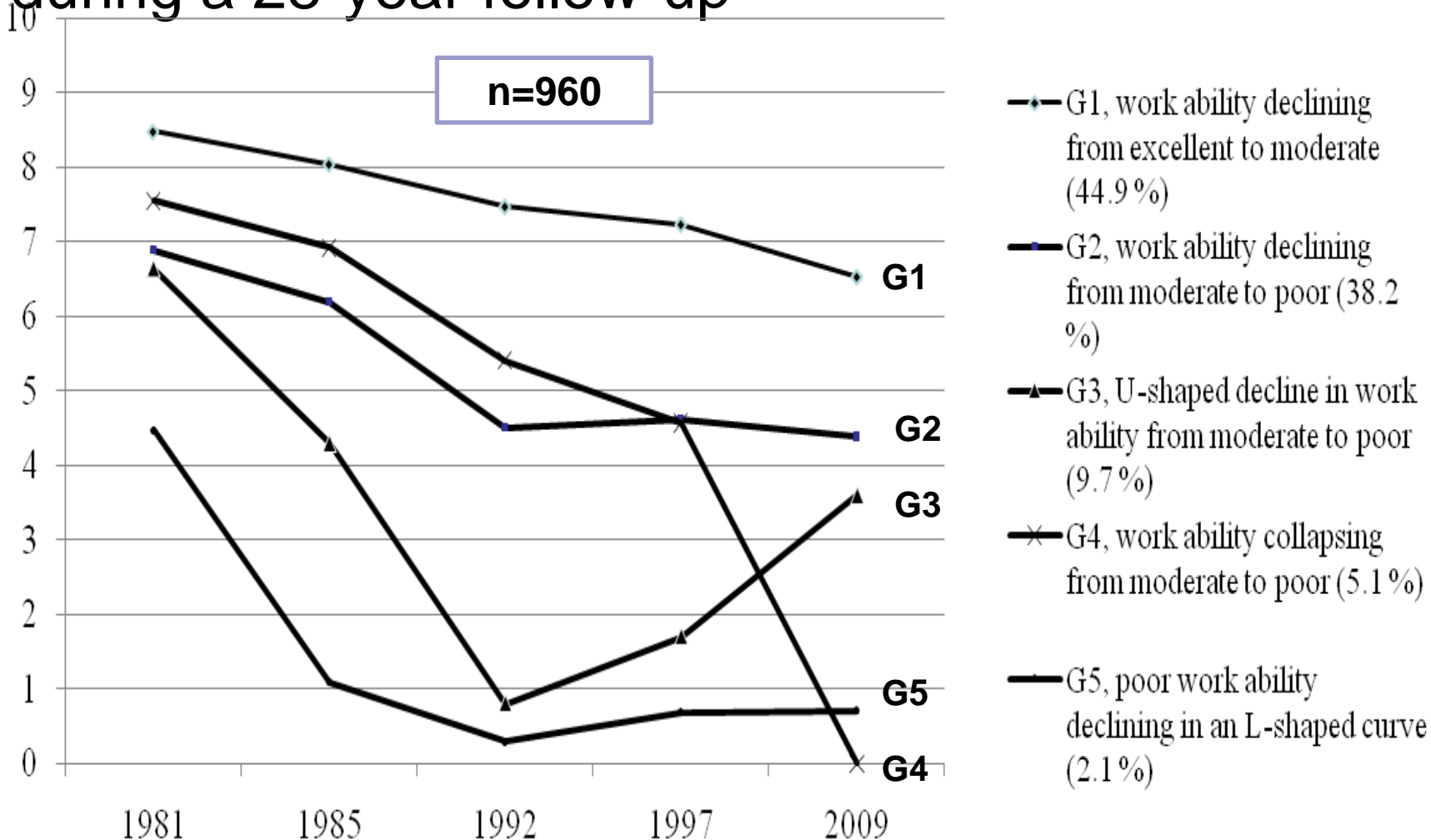
(von Bonsdorff MB et al. 2009 CMAJ)

Work ability trajectories for **women** during a 28-year follow-up



(von Bonsdorff ME et al. in review)

Work ability trajectories for men during a 28-year follow-up



- ◆ G1, work ability declining from excellent to moderate (44.9%)
- G2, work ability declining from moderate to poor (38.2%)
- ▲ G3, U-shaped decline in work ability from moderate to poor (9.7%)
- × G4, work ability collapsing from moderate to poor (5.1%)
- G5, poor work ability declining in an L-shaped curve (2.1%)

(von Bonsdorff ME et al. in review)

Conclusions

- **Promotion of good work ability over occupationally active years has a strong impact on later-life self-assessed health.**
- **If an ageing employee would have possibilities to maintain his or her work ability over occupationally active years it would enforce healthier and disability-free 3rd age.**
- **Work demand should be adjusted to employee resources to help to ensure better functional ability for people also years after their retirement**
- **Improving the working life conditions and focusing on timely early prevention could have far-reaching effects for the aging population**
- **This may have strong implications for social policy as the populations in most industrialized countries are ageing rapidly and the economic costs of this ageing are expected to rise in the future.**



Thank you!

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