Does working beyond the statutory retirement age have an impact on health and functional capacity?

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Arbetarskyddsfonden
The Finnish Work Environment Fund

Shakespere W (1599)
Monologue "All the World Stage" in "As You Like It"

"The sixth age shifts
Into the lean and slipper'd pantaloon,
With spectacles on nose and pouch on side,
His youthful hose, well sav'd, a world too wide
For his shrunk shank, and his big manly voice,
Turning again toward childish treble, pipes
And whistles in his sound.
Last scene of all,
That ends this strange eventful history,
Is second childishness and mere oblivion,
Sans teeth, sans eyes, sans taste, sans everything."

...more positive descriptions of ageing

Fries 1980:
"Compression of morbidity"

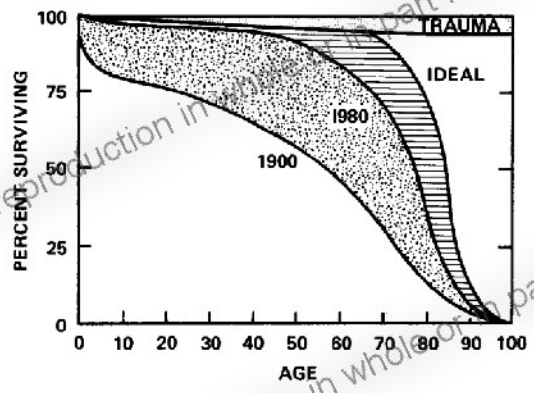


Figure 2. The Increasingly Rectangular Survival Curve.

Rowe & Kahn 1997:
"Successful aging"

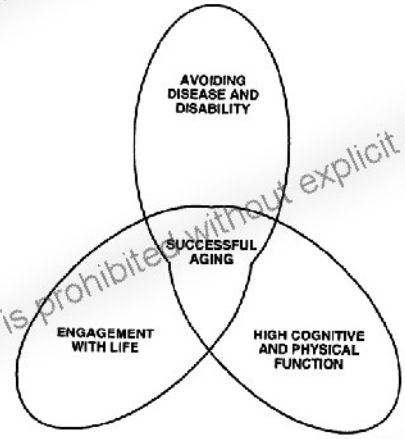
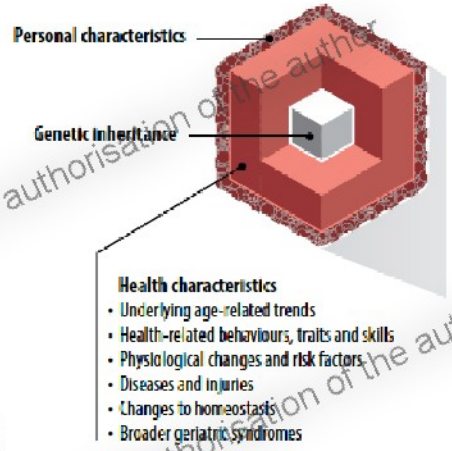


Figure 1. A model of successful aging.

World Health Organization 2015:
"Healthy ageing"



"The process of developing and maintaining the functional ability that enables well-being in older age."

Fries 1980:
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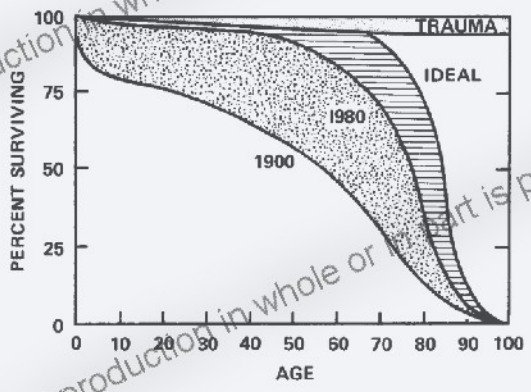


Figure 2. The Increasingly Rectangular Survival Curve.

-> Mortality
-> Chronic age-related diseases

Rowe & Kahn 1997:
"Successful aging"

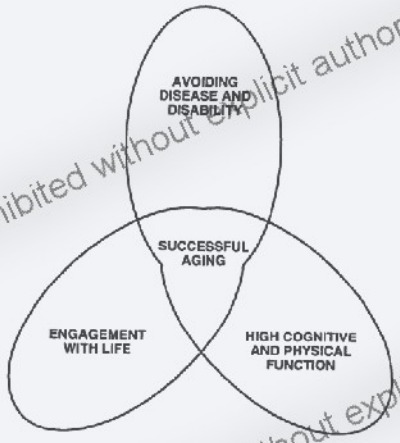
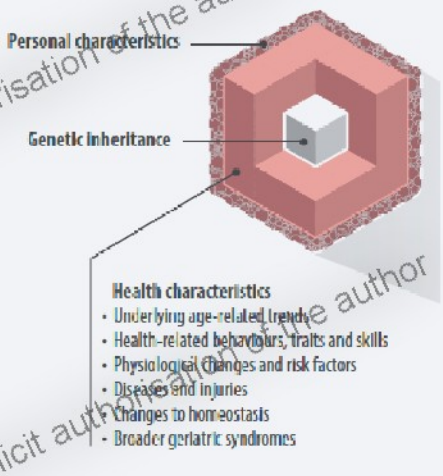


Figure 1. A model of successful aging

-> Cognitive and physical functioning
-> Disability

World Health Organization 2015:
"Healthy aging"



"The process of developing and maintaining the functional ability that enables well-being in older age."

-> Geriatric syndromes, dementia
-> Mental well-being, life satisfaction
-> Social relations

What are the life-long effects of work on health and functioning?

Factors supporting health and well-being

Income

Social support and esteem from colleagues/management

Job satisfaction & engagement

Self-actualization

Personal growth

Doing something that benefits the society

Factors that may be detrimental to health

Job strain

Effort-reward imbalance

Long working hours

Physical overload

Workplace violence and bullying

Organizational injustice

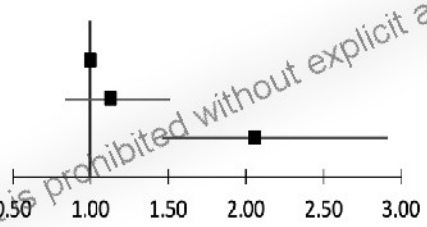
Chemical exposures

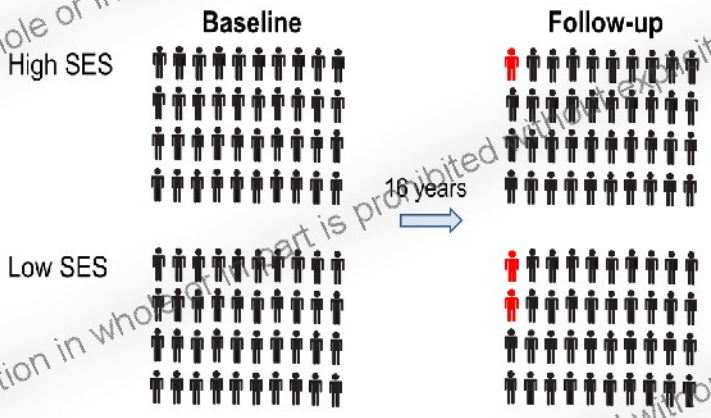
Injuries

Can having a cognitively stimulating job reduce old-age dementia risk?

Prospective analysis: Working in higher SES jobs linked to lower dementia risk/ later onset

Socioeconomic status	Hazard ratio (95% confidence interval)	N (total)	N (cases)	Hazard ratio (95% CI)
High		3705	89	1.00 (reference)
Intermediate		4319	319	1.13 (0.84 - 1.51)
Low		1914	120	2.06 (1.46 - 2.91)

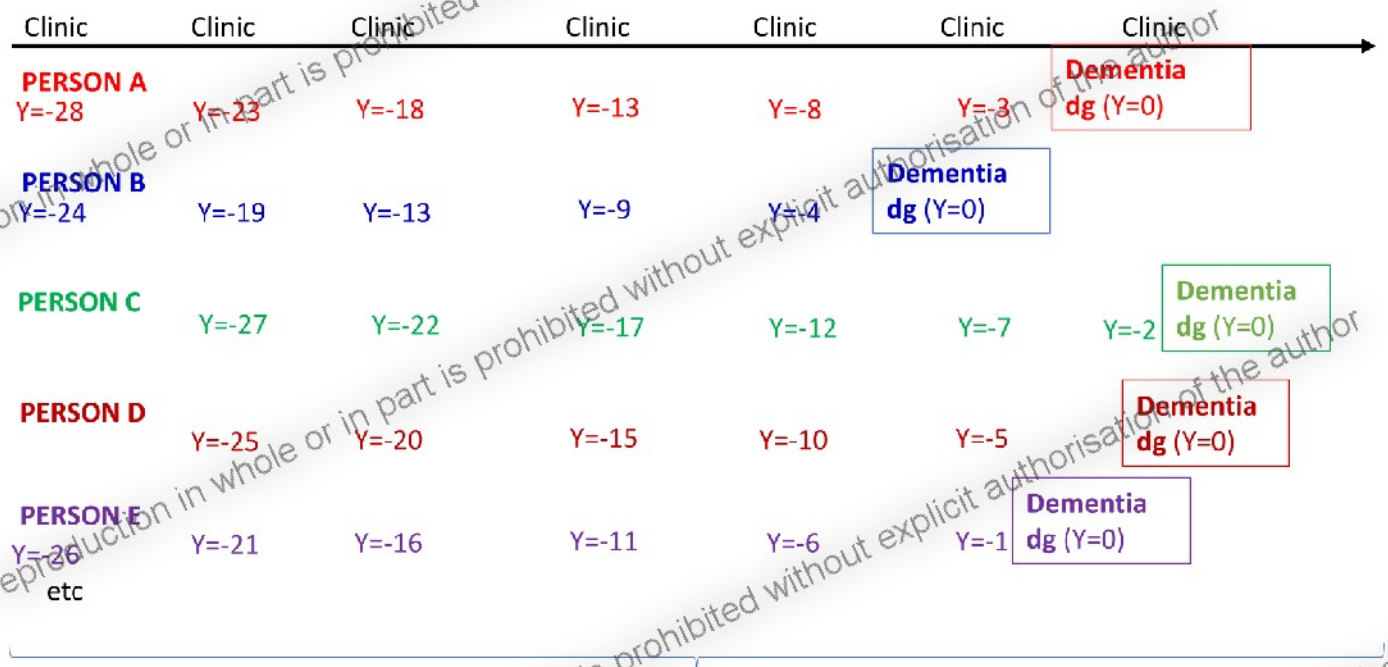




High SES is associated with lower risk of developing dementia or a later onset of dementia or both.

Rusmaully et al. *PLoS Med* 2017

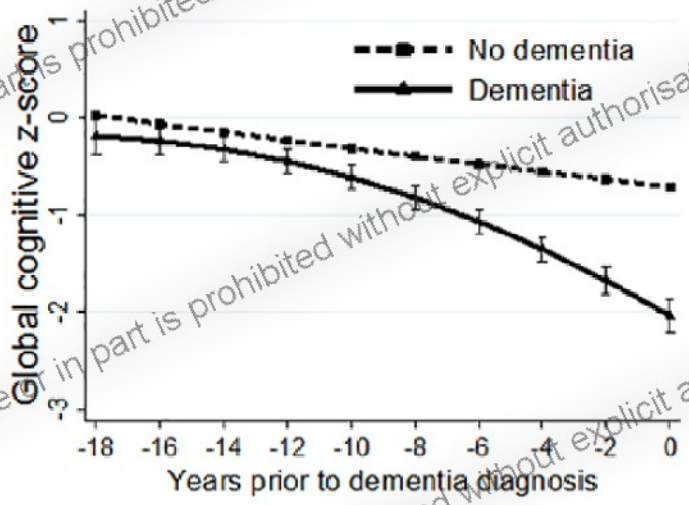
Retrospective analysis using serial measurements of cognitive function and date of dementia diagnosis



Repeat data with reverse time scale aligned to the date of dementia diagnosis

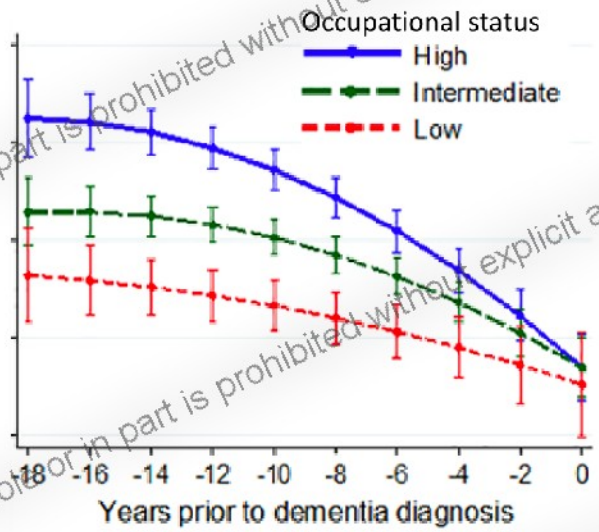
-28 -27 -26 -25 -24 -23 -22 -21 -20 -19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0

Retrospective analysis of cognitive functioning from dementia dg backwards in time



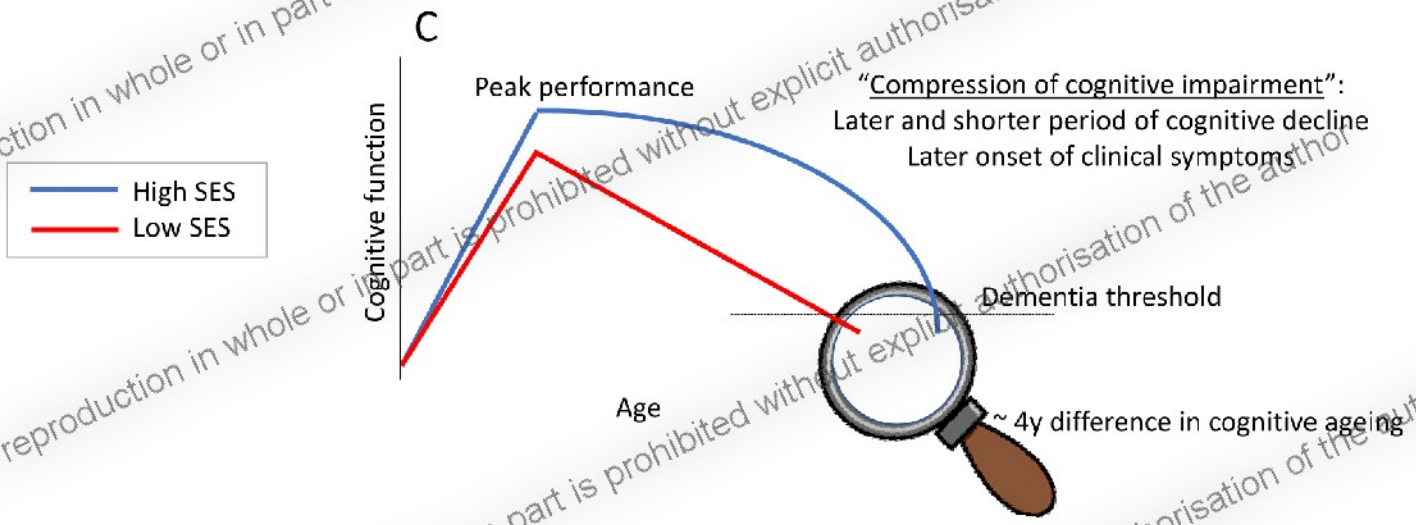
Rusmaully et al. *PLoS Med* 2017

Retrospective analysis of cognitive function from dementia dg backwards in time

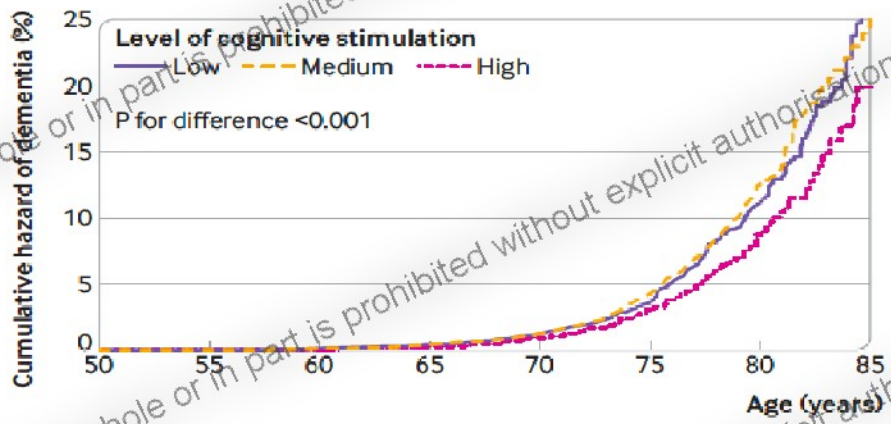


Rusmaully et al. *PLoS Med* 2017

How is working in higher socioeconomic status jobs associated with the risk of dementia?



Cognitive stimulation in the workplace, plasma proteins, and risk of dementia: three analyses of population cohort studies



Kivimaki et al. BMJ 2021

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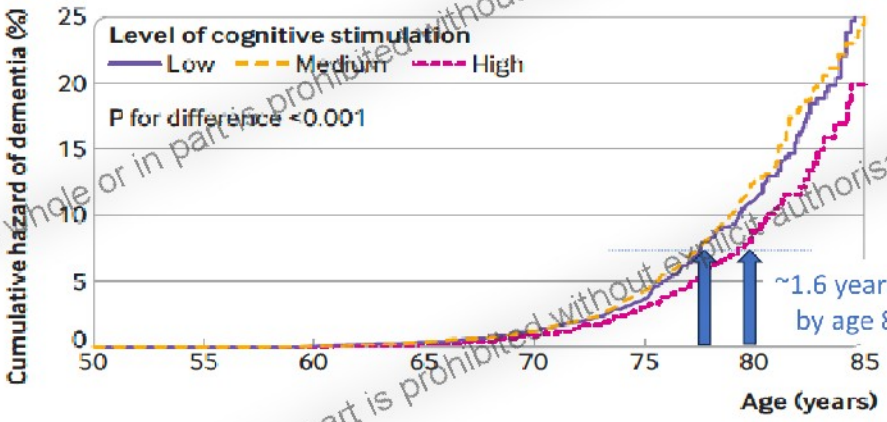

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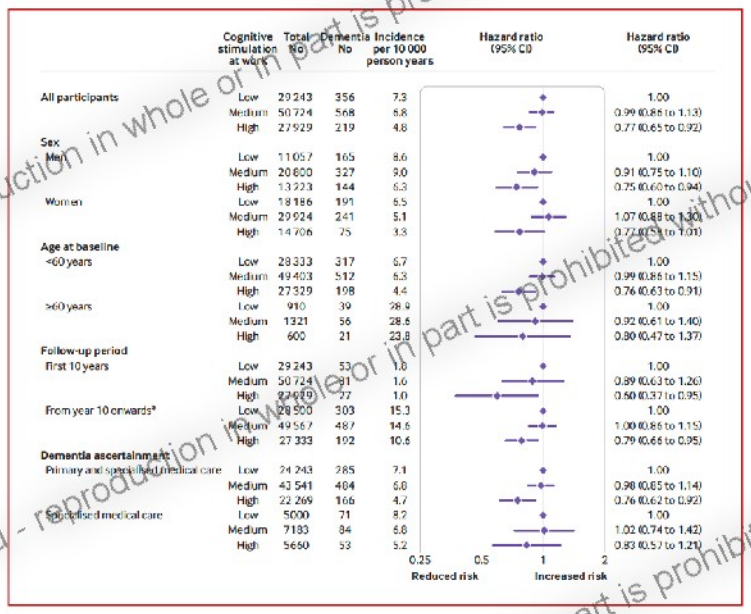
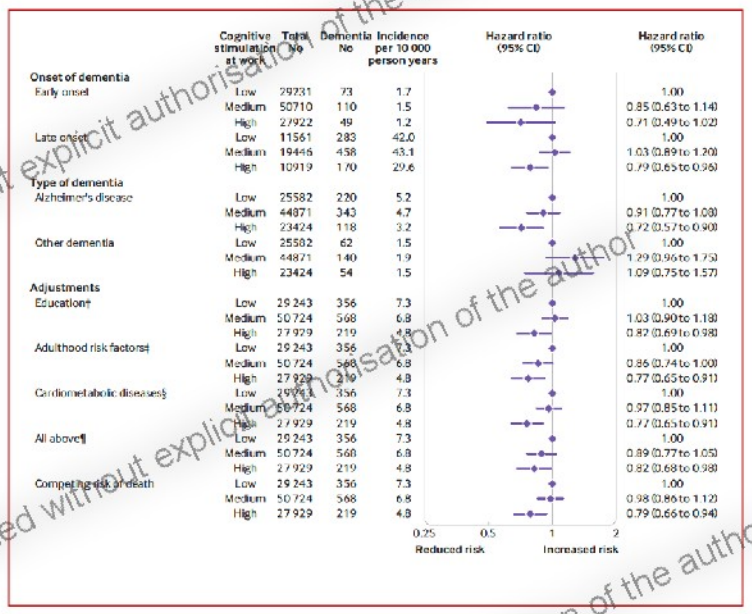
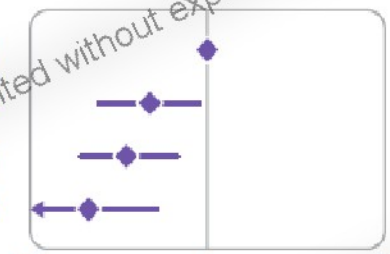




Kivimaki et al. BMJ 2021

Cognitive stimulation		Incidence per 10 000 person years	Hazard ratio (95% CI)	Hazard ratio (95% CI)
Education	At work			
Low	Low	8.1		1.00
Low	High	5.9		0.80 (0.66 to 0.97)
High	Low	4.1		0.73 (0.61 to 0.89)
High	High	3.5		0.63 (0.49 to 0.82)



Kivimaki et al. BMJ 2021

Cognitive stimulation at work ➞ plasma proteins

	High v low cognitive stimulation	
Protein	β (SE)*	P value
Pulmonary surfactant associated protein D (SP-D)	−0.32 (0.06)	<0.001
➡ Slit homologue 2 protein (SLIT2)	−0.30 (0.06)	<0.001
Hexokinase 2 (HXK2)	−0.28 (0.06)	<0.001
➡ Carbohydrate sulfotransferase 12 (CHSTC)	−0.28 (0.06)	<0.001
➡ Peptidyl-glycine α-amidating monooxygenase (AMD)	−0.28 (0.06)	<0.001
Neutrophil cytosol factor 1 (NCF-1)	−0.27 (0.06)	<0.001

These proteins inhibit axonogenesis and synaptogenesis

Kivimaki et al. BMJ 2021

Table 4 | Association of six plasma proteins with incident dementia in two cohort studies (analysis 3)

Protein and cohort	Total No	No with dementia	Adjusted hazard ratio (95% CI) for dementia*	Directionally consistent and significant†
SLIT2:				
Whitehall	2261	109	1.19 (0.97 to 1.45)	
ARIC	11 395	1942	1.12 (1.00 to 1.26)	Yes
Both	13 656	2051	1.14 (1.03 to 1.25)	
CHSTC:				
Whitehall	2261	109	1.08 (0.90 to 1.31)	
ARIC	11 395	1942	1.22 (1.05 to 1.41)	Yes
Both	13 656	2051	1.17 (1.04 to 1.31)	
AMD:				
Whitehall	2261	109	1.11 (0.92 to 1.34)	
ARIC	11 395	1942	1.07 (0.99 to 1.16)	Yes
Both	13 656	2051	1.08 (1.00 to 1.16)	

Kivimaki et al. BMJ 2021

WHAT THIS STUDY ADDS

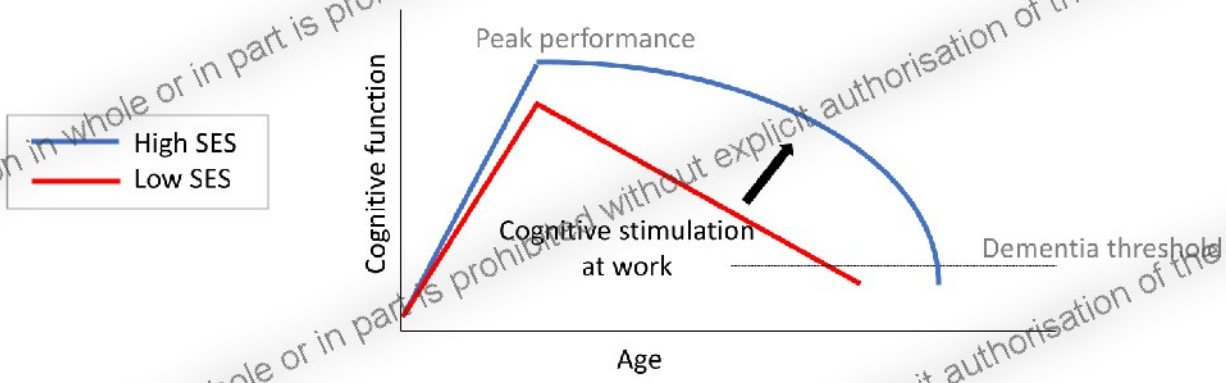
In this multicohort study of 107 896 participants, the risk of dementia in old age was found to be lower in individuals with cognitively stimulating jobs than in those with non-stimulating jobs

This finding was robust to adjustments for education, established dementia risk factors in adulthood, and the competing risk of death

Cognitive stimulation was also associated with lower levels of plasma proteins that might inhibit axonogenesis and synaptogenesis and increase dementia risk

Kivimaki et al. BMJ 2021

Cognitive stimulation at work delays dementia onset by increasing cognitive reserve



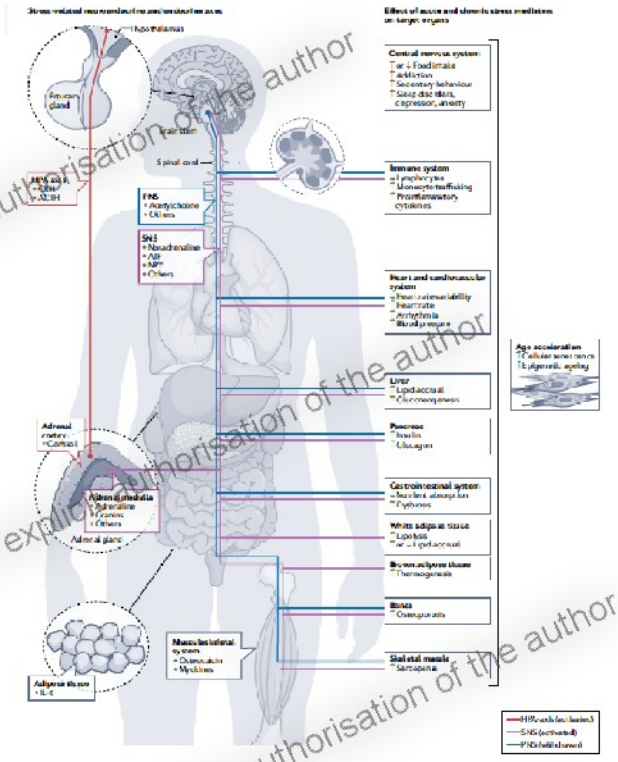
Kivimaki et al. BMJ 2021

How much do work-related stressors affect the risk of chronic age-related diseases?

The multiple roles of life stress in metabolic disorders

Mika Kivimäki[1,2✉], *Alessandro Bartolomucci*[3,4✉] *and Ichiro Kawachi*[5,6✉]

Abstract | The activation of stress-related neuroendocrine systems helps to maintain homeostasis, but excessive stress can damage body functions. We review current evidence from basic sciences and epidemiology linking stress to the development and progression of metabolic disorders throughout life. Findings from rodents demonstrate that stress can affect features of metabolic dysfunction, such as insulin resistance, glucose and lipid homeostasis, as well as ageing processes such as cellular senescence and telomere length shortening. In human studies, stressors in the home, workplace and neighbourhood are associated with accelerated ageing and metabolic and immune alterations, both directly and indirectly via behavioural risks. The likelihood of developing clinical conditions, such as diabetes mellitus and hepatic steatosis is increased in individuals with adverse childhood experiences or long-term (years) or severe stress at work or in private life. The increased risk of metabolic disorders is often associated with other stress-related conditions, such as mental health disorders, cardiovascular disease and increased susceptibility to infections. Equally, stress can worsen prognosis in metabolic diseases. As favourable modifications in stressors are associated with reductions in incidence of metabolic disorders, further investigation of the therapeutic value of targeting stress in personalized medicine is warranted.



NATURE REVIEWS | ENDOCRINOLOGY

2023

Stressor	Disease outcome	Relative risk for disease
Adverse childhood experiences (stressor in the home)	Sexually transmitted infections	5.92
	Illicit drug use	5.17
	Depression	4.74
	Anxiety	3.70
	Respiratory disease	3.05
	Liver or digestive disease	2.76
	Cancer (any site)	2.31
	Cardiovascular disease	2.07
	Overweight and obesity	1.39
	Diabetes mellitus	1.38
Job strain (stressor at work)	Obesity class II or III (BMI ≥35 kg/m²)	1.30
	Depression requiring hospital treatment	1.22
	Stroke (ischaemic)	1.18
	Lung cancer	1.17
	Coronary heart disease	1.17
	Colorectal cancer	1.16
	Diabetes mellitus	1.15
	COPD	1.10
	Asthma	1.01
	Stroke (intracerebral haemorrhage)	1.01
	Breast cancer	0.97
	Cancer (any site)	0.97
	Prostate cancer	0.86
Long working hours (stressor at work)	Cardiovascular death	1.37
	Any severe infection	1.36
	Stroke (cerebral infarction)	1.28
	Angina pectoris	1.22
	Liver disease	1.18
Long working hours (stressor at work) (cont.)	Diabetes mellitus	1.17
	Overweight or obesity (BMI ≥25 kg/m²)	1.17
	Any severe musculoskeletal disorder	1.12
	Ischaemic heart disease	1.00
	Cancer (any site)	0.95
	Any severe respiratory disease	0.95

Physical and mental conditions

Childhood severe stress (eg, child maltreatment or exposure to domestic violence): *Relative risk of physical or mental illness up to 5.9-fold*

Work-related stressors: *Relative risk of physical or mental illness up to 1.4-fold*

Kivimäki et al. *Nature Review* 2023

The Telegraph
Monday April 4, 2011

Hard work won't kill you? Well it might actually

It is often said that "hard work won't kill you".

CNN

Long hours at work may boost heart-attack risk

By **Amanda Gardner**, Health.com
April 4, 2011 -- Updated 2143 GMT (0543 HKT)

Kivimäki et al. *Ann Intern Med* 2011

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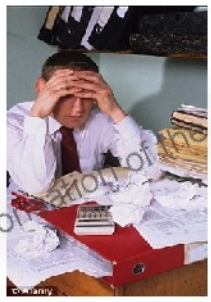

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UK NEWS

Heart risk of long hours

Long hours at work increase heart risk

Tue Apr 5, 2011

PRESSTV

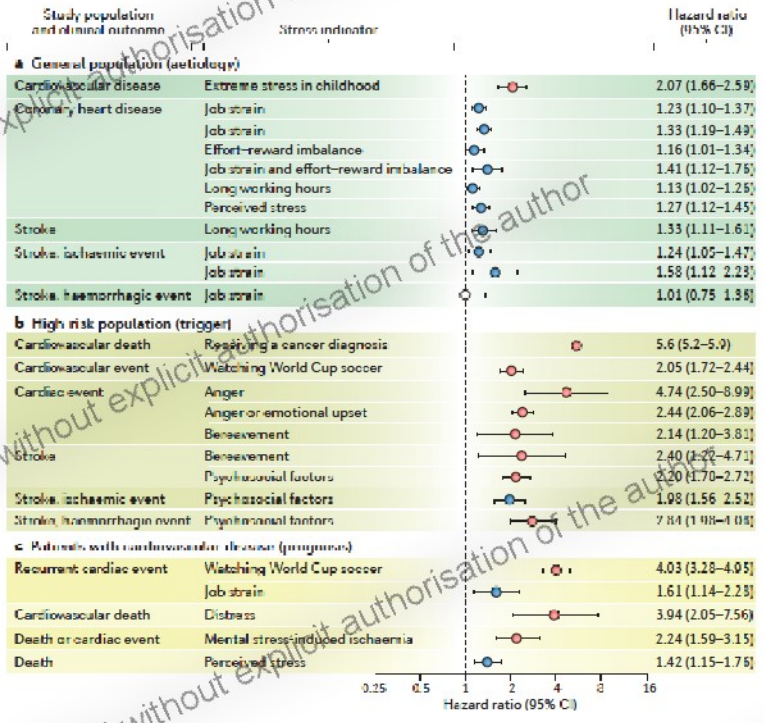
Kivimäki et al. *Ann Intern Med* 2011

PREVENTION OF CVD

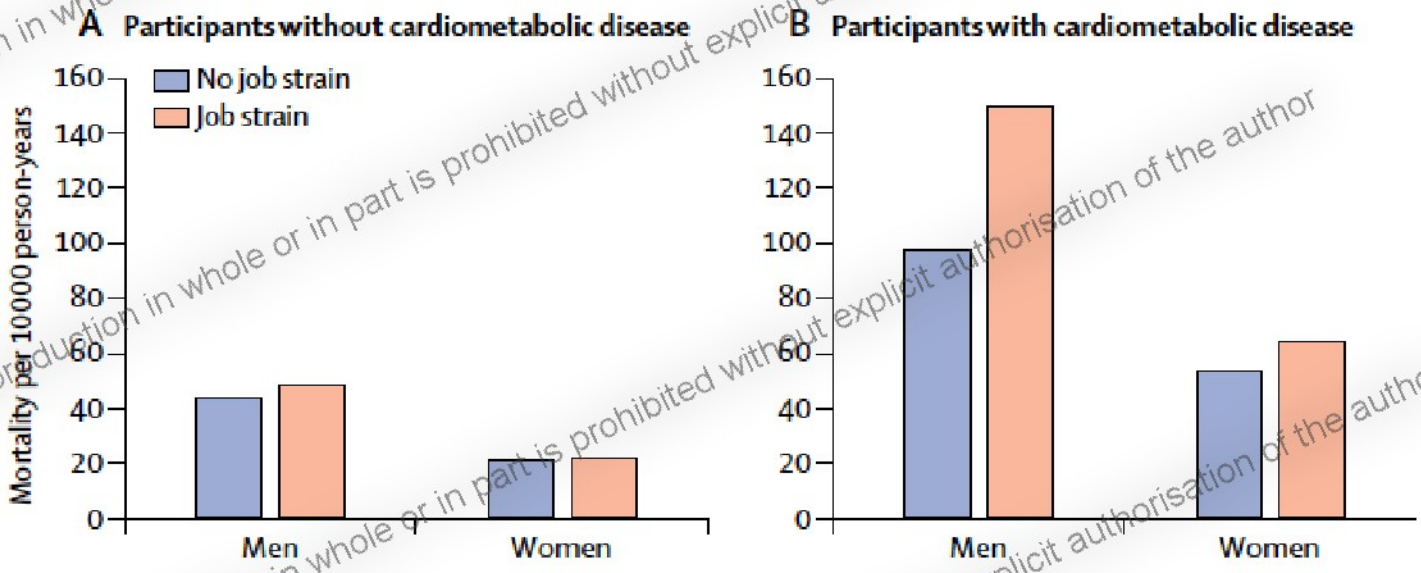
Effects of stress on the development and progression of cardiovascular disease

Mika Kivimäki[1] and Andrew Steptoe[2]

Abstract | Cardiovascular disease remains the leading cause of disease burden globally, which underlies the continuing need to identify new complementary targets for prevention. Over the past 5–10 years, the pooling of multiple data sets into 'mega-studies' has accelerated progress in research on stress as a risk and prognostic factor for cardiovascular disease. Severe stressful experiences in childhood, such as physical abuse and household substance abuse, can damage health and increase the risk of multiple chronic conditions in adulthood. Compared with childhood stress and adulthood classic risk factors, such as smoking, high blood pressure, and high serum cholesterol levels, the harmful effects of stress in adulthood are generally less marked. However, adulthood stress has an important role as a disease trigger in individuals who already have a high atherosclerotic plaque burden, and as a determinant of prognosis and outcome in those with pre-existing cardiovascular or cerebrovascular disease. In real-life settings, mechanistic studies have corroborated earlier laboratory-based observations on stress-related pathophysiological changes that underlie triggering, such as lowered arrhythmic threshold and increased sympathetic activation with related increases in blood pressure, as well as pro-inflammatory and procoagulant responses. In some clinical guidelines, stress is already acknowledged as a target for prevention for people at high overall risk of cardiovascular disease or with established cardiovascular disease. However, few scalable, evidence-based interventions are currently available.



Work stress and mortality



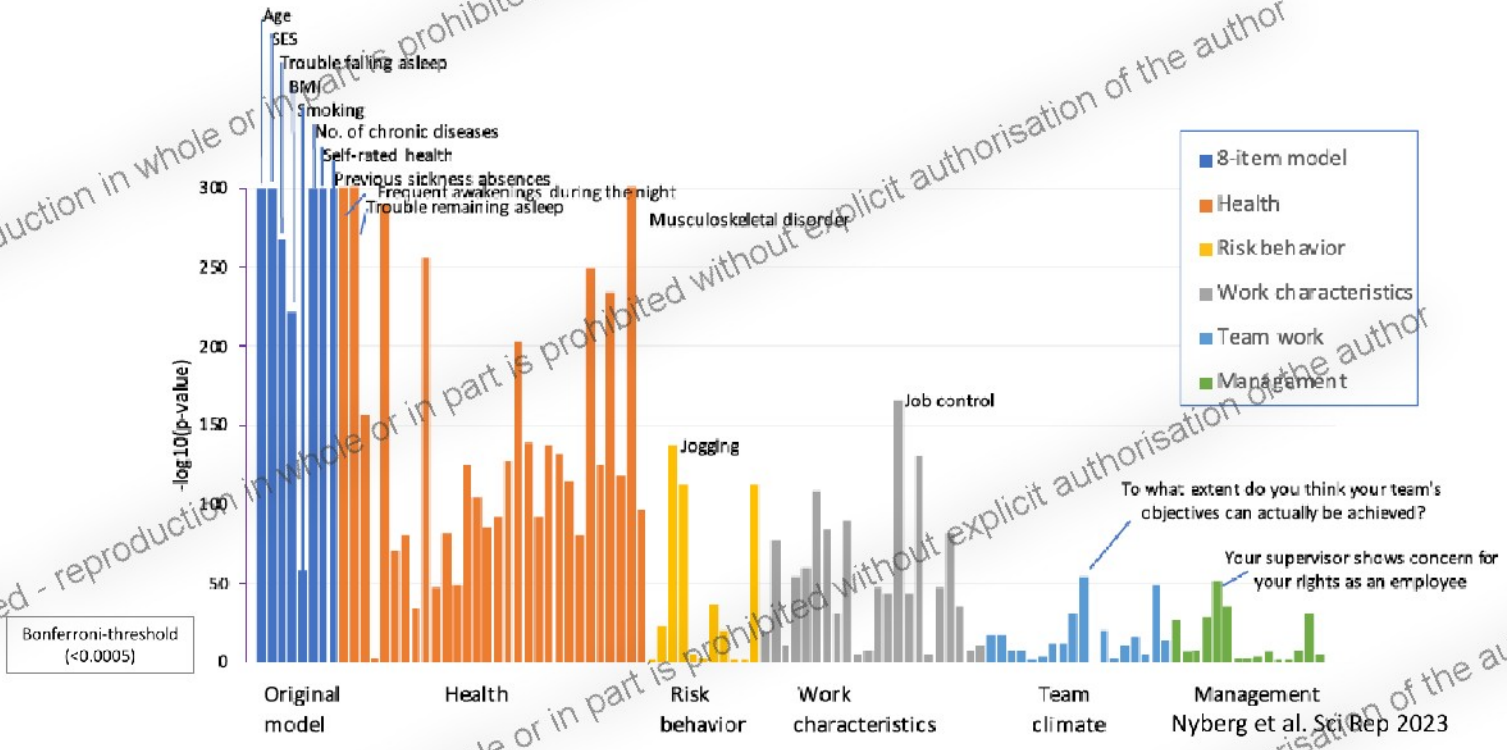
Kivimaki et al. *Lancet DE* 2018

How big a role do work-related factors play in the risk of disability?

A comparison to other risk and protective factors

Multifactorial prediction algorithm

- Analysis of all bivariate associations between 82 items of a workplace questionnaire survey and risk of work disability – Nearly all variables were significantly associated with work disability.



Nyberg et al. Sci Rep 2023

Risk algorithm	HR (95% CI)	N (total)	N (cases)
<5	1.00 (reference)	46,777	820
5 – 9.9	3.52 (3.52 – 4.25)	14,536	879
10 – 14.9	6.87 (6.23 – 7.56)	8293	813
15 – 19.9	10.29 (9.31 – 11.37)	5490	729
20 – 24.9	14.16 (12.76 – 15.72)	3663	617
25 or more	31.72 (29.34 – 34.29	9762	2978

C-index 0.84 (=the probability a randomly selected participant who experienced an event – work disability – had a higher risk score than a participant who had not experienced the event).

Work disability prediction

Age	○ <35	○ 35-39	○ 40-44	◉ 45-49	○ 50-54	○ 55+	
Self-rated health	◉ Good	○ Rather good	○ Moderate	○ Rather poor	○ Poor		
No. of sickness absences during previous year	○ 0	◉ 1	○ 2	○ 3 or more			
Socioeconomic position	◉ Manager	○ Senior specialist	○ Specialist	○ Office worker	○ Service worker	○ Process worker	○ Other
Chronic illness	◉ No	○ Yes					
Trouble falling asleep	○ Never	○ 1-3 nights/month	◉ Weekly	○ 2-4 nights/week	○ 5-6 nights/week	○ Almost every night	
BMI (kg/cm^2)	○ <18.5	○ 18.5-24.9	◉ 25-29.9	○ >30			
Smoking	◉ No	○ Yes					

10-year risk for work disability	3.44%

Airaksinen et al. *Sci Rep 2017*

Progression to disability among employees with chronic disease

Population	FIOH model
All*	0.84 (0.84, 0.85)
Low risk population†	0.82 (0.81, 0.83)
Disease group at baseline	
Musculoskeletal disease	0.80 (0.80, 0.81)
Migraine	0.83 (0.82, 0.84)
Hypertension	0.79 (0.78, 0.80)
Respiratory disease	0.82 (0.81, 0.83)
Depression	0.78 (0.77, 0.78)
Diabetes	0.78 (0.76, 0.80)
Cancer	0.72 (0.70, 0.74)
Coronary heart disease	0.76 (0.73, 0.78)
Comorbid depression and CMD‡	0.77 (0.74, 0.79)

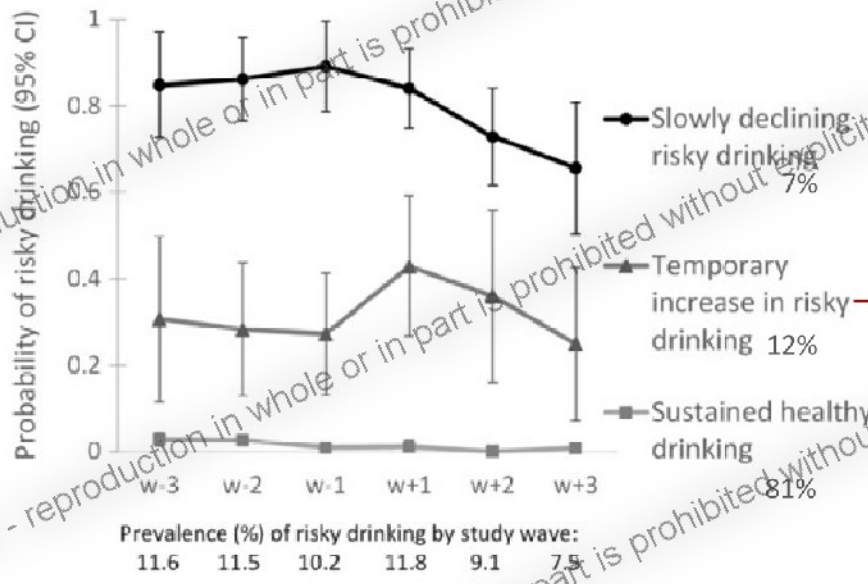
Nyberg et al. Sci Rep 2023

What changes in lifestyle, health and functioning happen after retirement (i.e. after excluding exposure to work)?

Post-retirement alcohol consumption, sleep, physical activity and social network

ADDICTION
SSA SOCIETY FOR THE STUDY OF ADDICTION
RESEARCH REPORT
doi:10.1111/add.13811

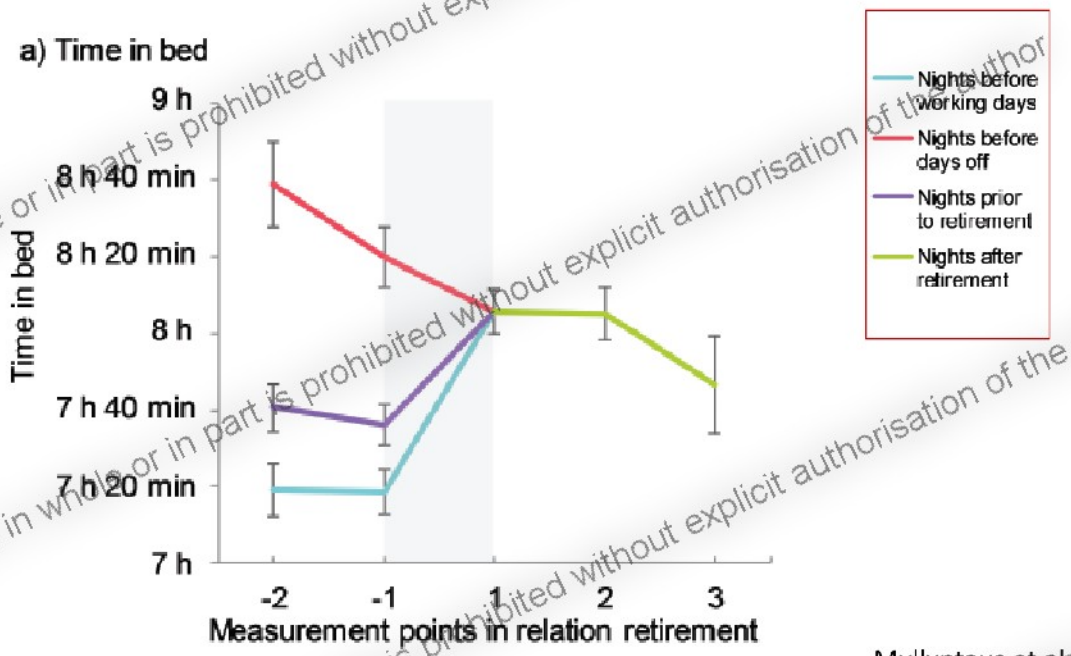
Trajectories of risky drinking around the time of statutory retirement: a longitudinal latent class analysis



Halonen et al. Addiction 2017

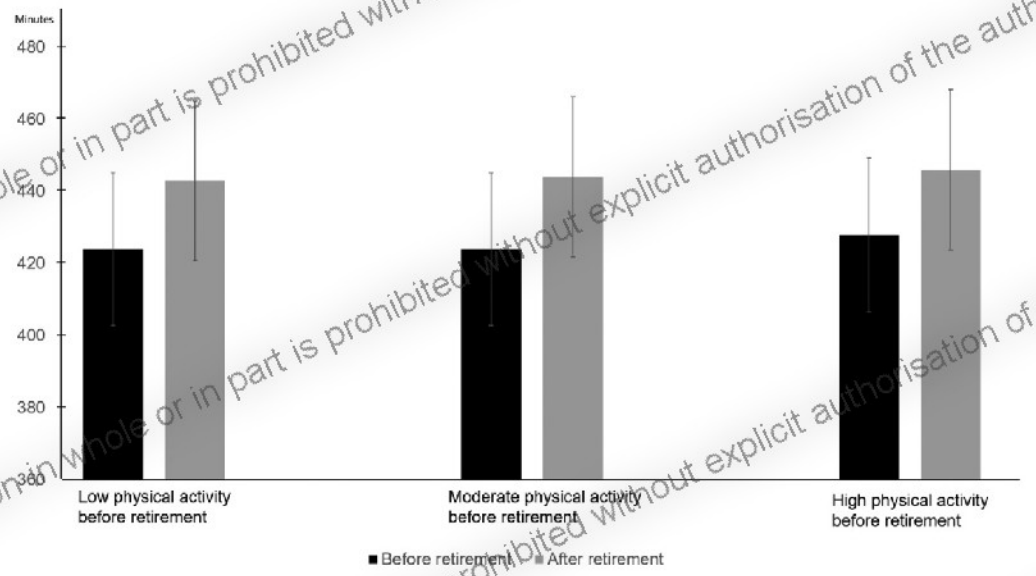
Variable	Participants at w_{-1} n (%)	Temporary increase in risky drinking versus healthy drinki OR	95% CI	
Sex				
Male versus female	1159 (20)	2.77	2.16	3.55
Cohort[a]				
2 versus 1	1579 (27)	1.05	0.79	1.40
3 versus 1	2153 (37)	1.23	0.90	1.68
Age at retirement				
60–64 versus < 60	4271 (74)	1.19	0.85	1.67
> 64 versus < 60	848 (15)	0.99	0.64	1.53
Marital status				
Single versus married/cohabiting	368 (6)	0.85	0.49	1.50
Divorced/widowed versus married/cohabiting	1107 (19)	1.15	0.86	1.53
Occupational status				
High versus low	2207 (38)	1.10	0.83	1.45
Intermediate versus low	1558 (27)	1.09	0.82	1.45
Education				
High versus low	3262 (56)	0.92	0.69	1.23
Intermediate versus low	1667 (29)	0.71	0.51	0.99
Self-rated health				
Poor versus good	2126 (37)	1.06	0.85	1.33
Depression[b]				
Yes versus no	634 (12)	1.44	1.05	1.99
Smoking				
Former versus never	946 (17)	1.85	1.36	2.52
Current versus never	502 (9)	3.90	2.70	5.64
Physical activity				
Low versus moderate	2436 (42)	1.17	0.94	1.46
BMI, kg/m^2				
25–29.9 versus < 25	2275 (41)	1.17	0.90	1.51
≥ 30 versus < 25	894 (16)	1.18	0.84	1.65
Area of work-place				
Metropolitan versus other area	1562 (27)	1.29	1.00	1.66
Job strain				
yes versus no	4573 (76)	0.82	0.63	1.07

Time in bed and sleep efficiency measured by actigraph before and after retirement



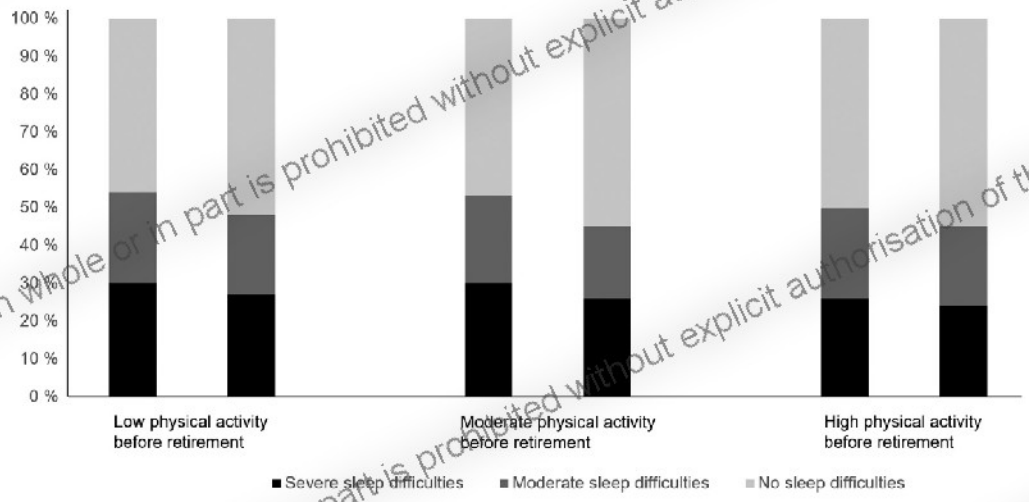
Myllyntaus et al. Sleep 2020

Sleep duration before and after retirement



Alhainen et al. Sleep Med 2020

Sleep difficulties before and after retirement



Alhainen et al. Sleep Med 2020

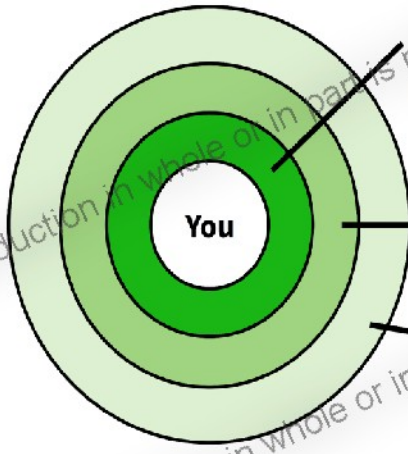
RESEARCH Open Access

Changes in the 24-h movement behaviors during the transition to retirement: compositional data analysis

Kristin Suorsa[1,2*], Tuija Leskinen[1,2], Jesse Pasanen[1,2], Anna Pulakka[3,4], Saana Myllyntausta[5], Jaana Pentti[1,2,6], Sebastien Chastin[7,8], Jussi Vahtera[1,2] and Sari Stenholm[1,2]

Conclusion: Retirement was associated with a decrease in the proportion of time spent in active behaviours, especially time spent in MVPA.

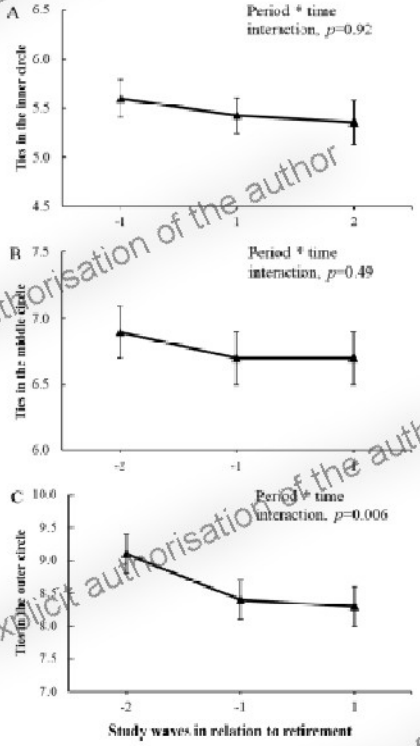
Social network ties and retirement



Inner Circle: People so close it's hard to imagine life without them.

Middle Circle: People not as close, but still important.

Outer Circle: People less close, but still part of your life.



Kauppi et al. Eur J Aging 2021

Characteristics of social networks and mortality risk

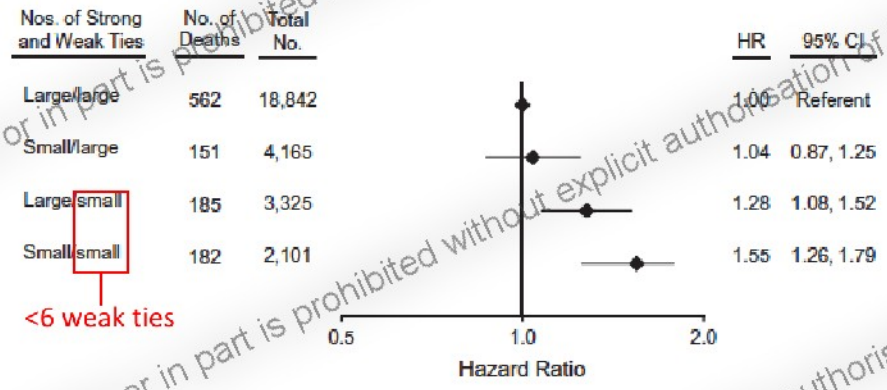
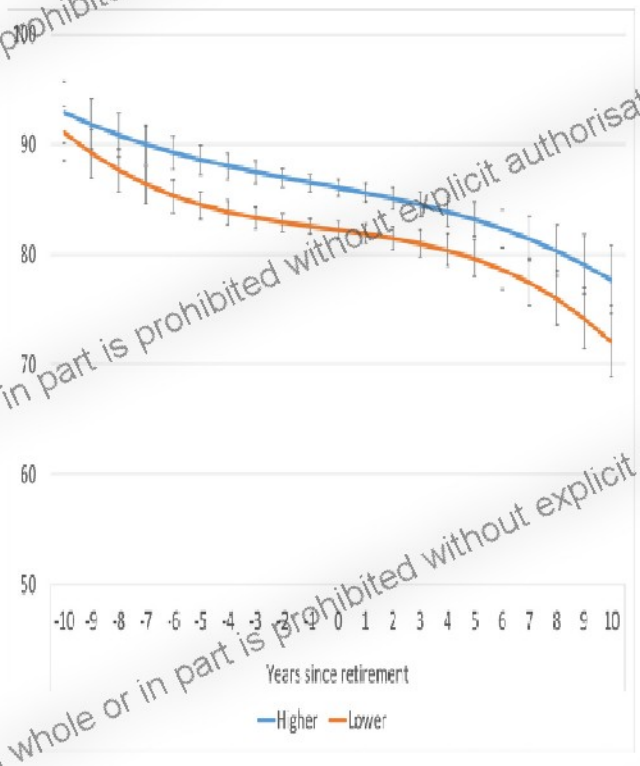


Figure 3. Hazard ratios (HRs) for all-cause mortality according to numbers of strong ("small" refers to 0–2 members and "large" refers to ≥3 members) and weak ("small" refers to 0–5 members and "large" refers to ≥6 members) ties in the respondent's social network, Finland, 1998–2013/2015. The figure shows summary estimates pooled from study-specific (Finnish Public Sector Study/Health and Social Support Study) results. HRs were adjusted for age, sex, education, chronic conditions, lifestyle, and depression. Bars, 95% confidence intervals (CIs).

Kauppi et al. Am J Epidemiol 2018

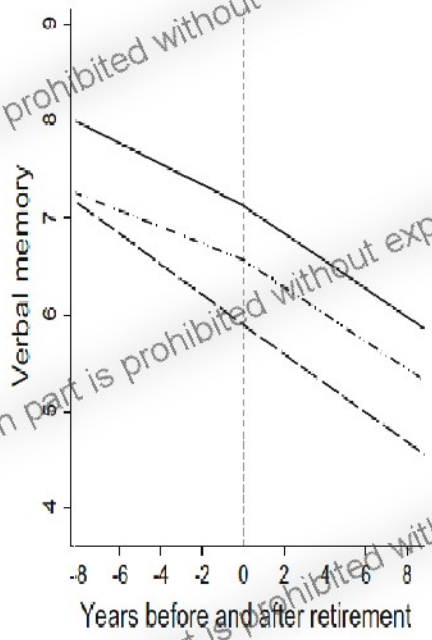
Post-retirement physical and cognitive functioning and life satisfaction

Trajectory of physical functioning (RAND-36 subscale) in women by socioeconomic status



Latlukka et al. JECH 2023

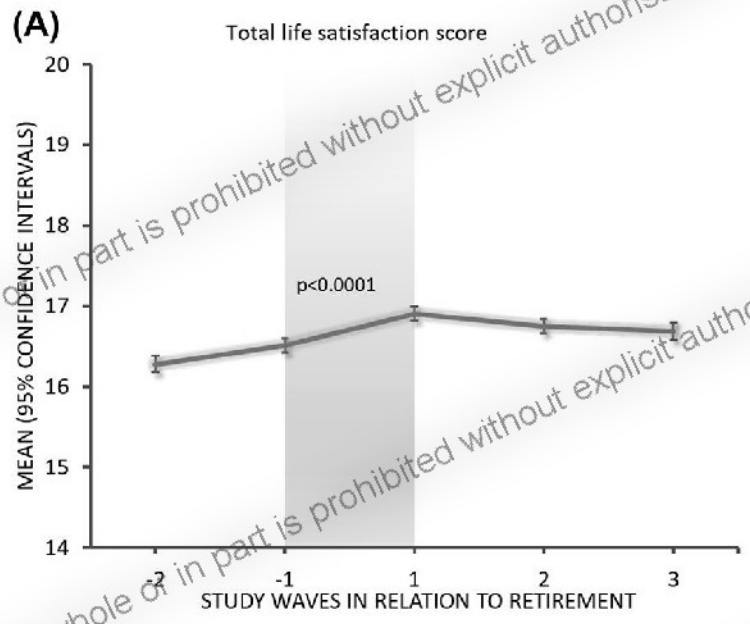
Effect of retirement on cognitive performance



Xue et al. Eur J Epidemiol 2018

ORIGINAL INVESTIGATION

Changes in life satisfaction during the transition to retirement: findings from the FIREA cohort study



Prakash et al Eur J Aging 2022

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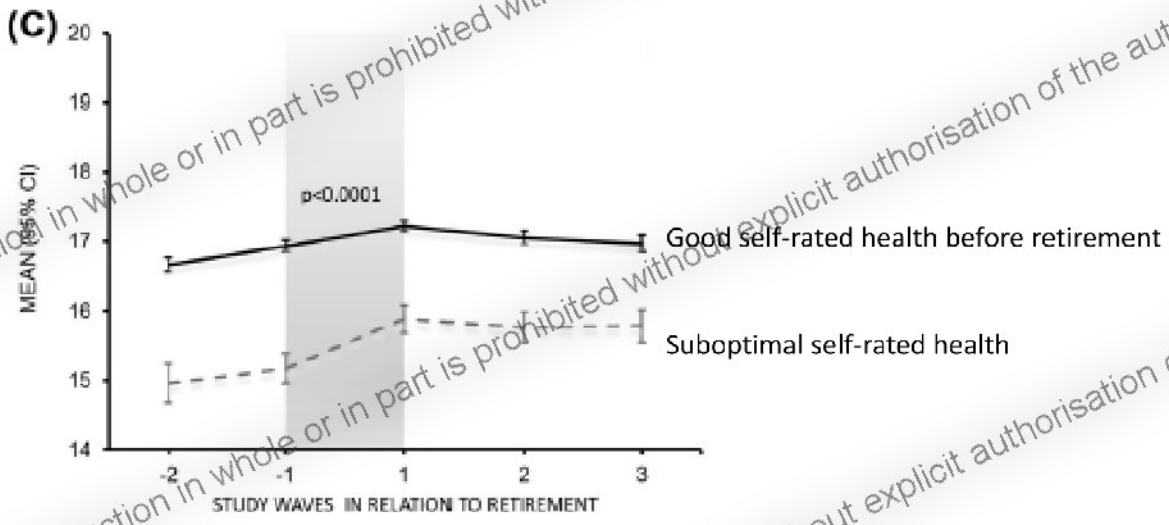

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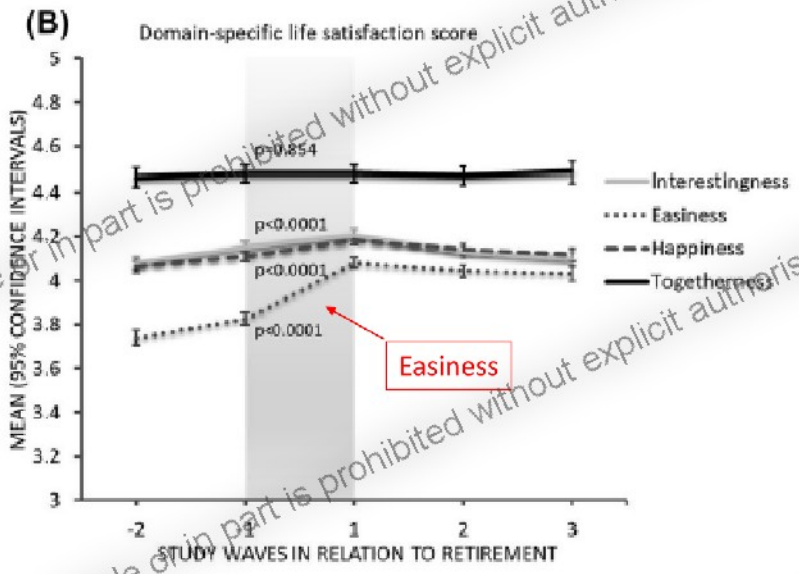


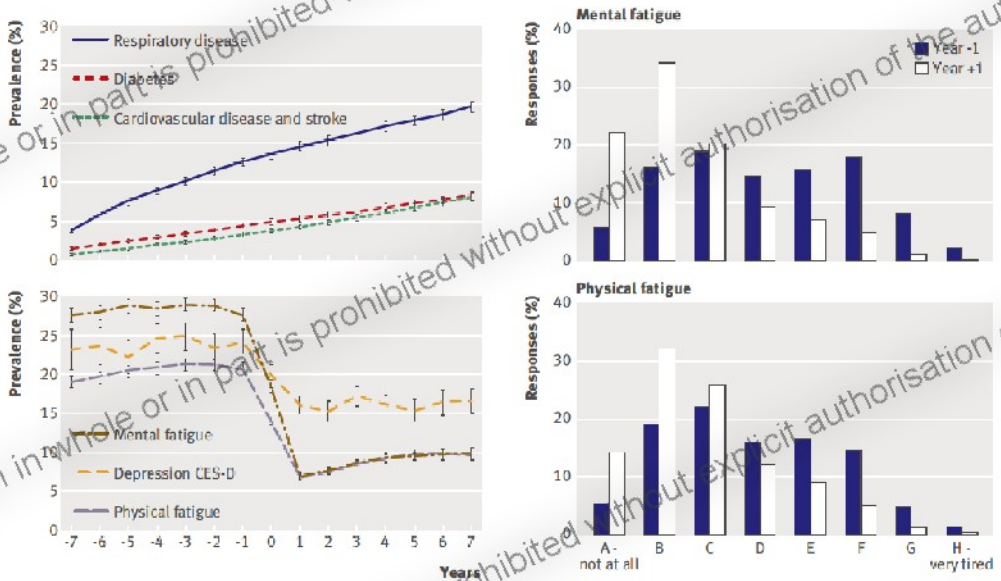
Prakash et al Eur J Aging 2022

Post-retirement age-related diseases, mental well-being and self-rated overall health

BMJ

Effect of retirement on major chronic conditions and fatigue: French GAZEL occupational cohort study

Hugo Westerlund, associate professor of psychology,[1,2] Jussi Vahtera, professor of public health,[3,4] Jane E Ferrie, senior research fellow,[2] Archana Singh Manoux, research director,[2,5] Joana Pentti, statistician,[3] Maria Melchior, senior researcher,[5] Constanze Leineweber, researcher,[1] Markus Jokela, senior research fellow,[2] Johannes Siegrist, professor of medical sociology,[6] Marcel Goldberg, professor of epidemiology,[5] Marie Zins, senior researcher,[5] Mika Kivimäki, professor of social epidemiology[2,3]



2010

Self-rate health before and after retirement

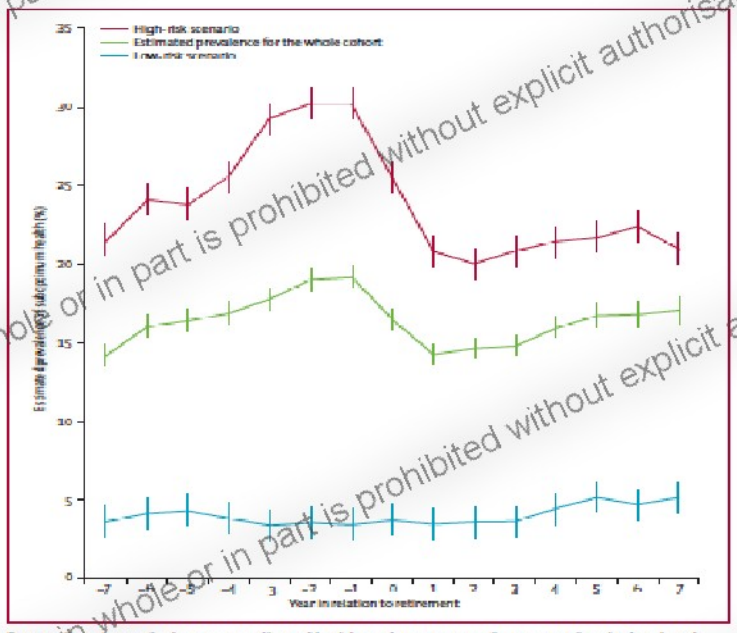


Figure 3: Prevalence of suboptimum self-rated health in relation to year of retirement for a high-risk and low-risk scenario involving men who retired at the statutory age of 55 years and before the year 2000
Low-risk profile=high occupational grade, low physical and psychological demands, and high job satisfaction. High-risk profile=low grade, high demands, and low satisfaction. Error bars indicate 95% CIs.

Individuals with low job satisfaction working in jobs with high psychological and physical demands

Individuals with high job satisfaction working in jobs with low psychological and physical demands

Westerlund et al. Lancet 2009

Who chooses to extend their work career beyond state retirement age?

People with higher SES jobs were 2 times more likely to continue working beyond the pensionable age. To a large extent, this was explained by physically lighter jobs, better work time control and better self-rated working capacity

Adjustments	ISCO 9	ISCO 5–8		ISCO 3–4		PERM	ISCO 1–2		PERM
	Reference	RR	95% CI	RR	95% CI	%	RR	95% CI	%
Unadjusted	1.00	0.97	0.75–1.27	2.05	1.61–2.61	.	1.84	1.45–2.33	.
Adjusted for gender	1.00	0.95	0.72–1.23	2.03	1.59–2.58	reference	1.79	1.41–2.27	reference
+part-time retirement	1.00	0.92	0.70–1.19	2.03	1.59–2.58	0	1.78	1.40–2.26	1.3
+shift work	1.00	0.95	0.73–1.24	1.99	1.56–2.54	3.9	1.73	1.36–2.21	7.6
+night work	1.00	0.96	0.73–1.25	2.04	1.60–2.59	-1.0	1.79	1.41–2.27	0
+physical workload	1.00	0.92	0.71–1.21	1.70	1.31–2.22	32.0	1.50	1.15–1.95	36.7
+job strain	1.00	0.94	0.72–1.22	1.97	1.55–2.52	5.0	1.72	1.35–2.20	8.9
+work time control	1.00	0.95	0.72–1.24	1.82	1.42–2.33	20.4	1.70	1.33–2.17	11.4
+all above work factors	1.00	0.91	0.69–1.20	1.60	1.22–2.10	41.7	1.46	1.12–1.91	41.8
+chronic somatic disease	1.00	0.95	0.73–1.24	2.02	1.58–2.57	1.0	1.75	1.38–2.22	5.1
+psychological distress	1.00	0.95	0.73–1.23	2.02	1.59–2.57	1.0	1.79	1.41–2.27	0
+work ability	1.00	0.91	0.70–1.18	1.86	1.46–2.36	16.5	1.56	1.23–1.98	29.1
+all above health indicators	1.00	0.92	0.70–1.19	1.88	1.47–2.38	14.6	1.57	1.24–1.99	27.8
+smoking	1.00	0.94	0.72–1.23	2.02	1.59–2.57	1.0	1.78	1.40–2.26	1.3
+alcohol use	1.00	0.95	0.72–1.23	2.03	1.59–2.58	0	1.79	1.41–2.27	0
+obesity	1.00	0.94	0.72–1.23	2.01	1.58–2.56	1.9	1.77	1.39–2.24	2.5
+physical activity	1.00	0.95	0.72–1.24	2.03	1.59–2.58	0	1.79	1.41–2.28	0
+all above lifestyle factors	1.00	0.97	0.74–1.26	2.03	1.60–2.59	0	1.81	1.42–2.30	-2.5
+ all covariates	1.00	0.91	0.69–1.20	1.58	1.21–2.07	43.7	1.38	1.06–1.80	51.9

Virtanen et al SJWEH 2017

Social relationships as predictors of extended employment beyond the pensionable age: a cohort study

Characteristics of social relationships	No extension ($n = 2212$)	Long extension	
		Model I	
	OR (ref.)	OR	95% CI
Married or cohabiting (no vs yes)	1.00	1.48	1.19, 1.84
Spouse working full-time (yes vs no)[a]	1.00	2.00	1.52, 2.65
Financial difficulties (yes vs no)	1.00	1.78	1.43, 2.22
Number of members in total social network (0–10 vs ≥ 11)	1.00	0.90	0.72, 1.12

Kauppi et al. Eur J Aging 2021

Does extending work careers beyond the state retirement age affect health or capacities?

Possible pros and cons of extending work careers

Favourable effects of work

↑ Maintaining larger outer-circle social network

For those with cognitively stimulating jobs

↑ Cognitive capacity, delay dementia

Postponing possible unfavourable effects of retirement

↓ Outer circle social network

↓ Some aspects of cognitive performance (small decline) in high SES groups

↓ Physical activity (small change)

Delaying favourable effects of retiring

↑ Sleep duration

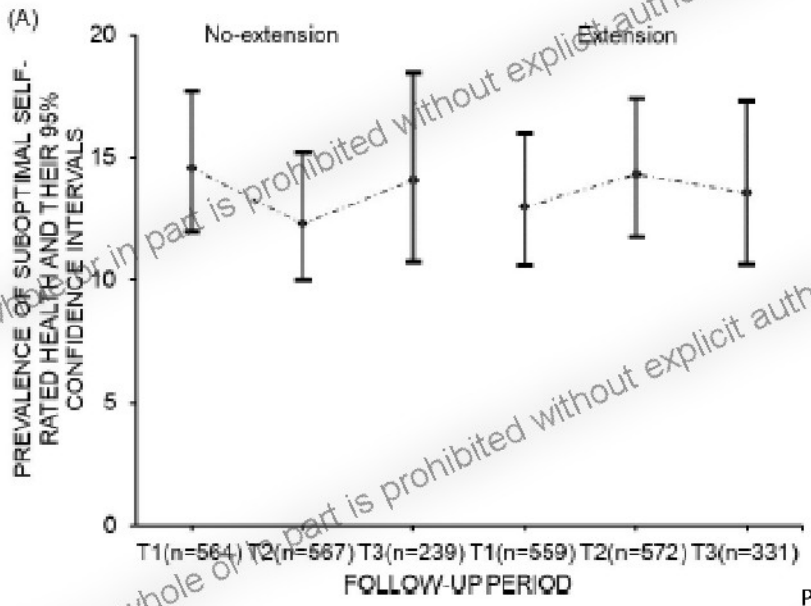
For individuals with job dissatisfaction and stress at work

↑ Life satisfaction, mental well-being and self-rated health

For those with a cardiometabolic disease and work-related stress

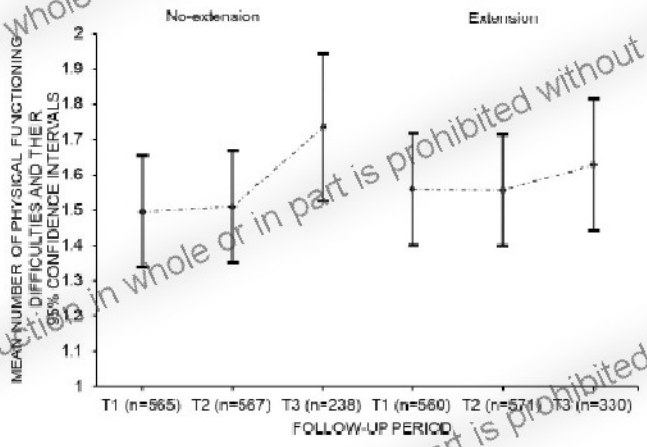
↑ Disease prognosis

Suboptimal self-rated heath before and after retirement with and without extension

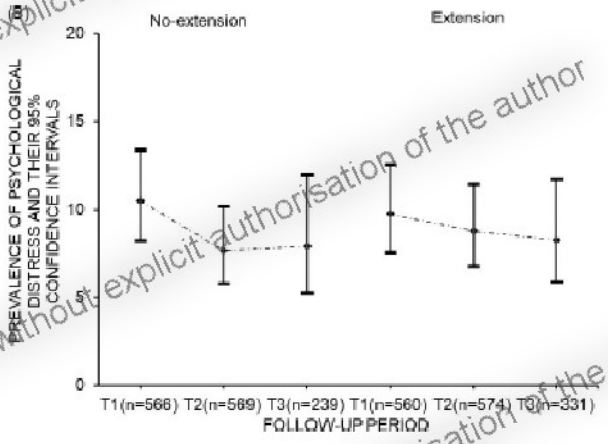


Prakash et al. Occup Environ Med 2021

Physical functioning difficulties



Psychological distress



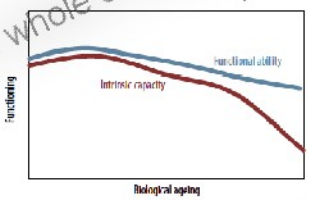
Longitudinal analysis "showed no evidence that voluntarily extending the working career beyond retirement age poses a risk to health and physical functioning among ageing workers."

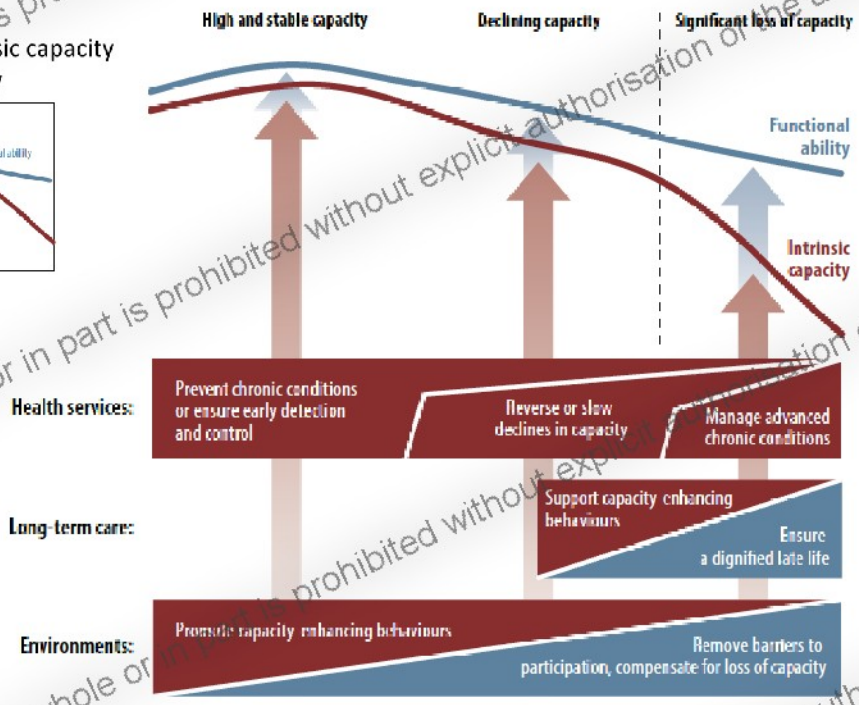
"Overall, the findings strengthen previous findings that extended working lives may not have long-lasting effects on health and functional capacity."

Prakash et al. Occup Environ Med 2021

World Report on Ageing and Health 2015 (WHO)

Trajectories of intrinsic capacity and functional ability





1. What are the life-long effects of work on health and functioning?

- Can having a cognitively stimulating job reduce old-age dementia risk?
- How much do work-related stressors affect the risk of chronic diseases?
- How big a role do work-related factors play in the risk of disability?

2. What changes in lifestyle, health and functioning happen after retirement?

3. Who chooses to extend their work career beyond statutory retirement age?

4. Does extending work careers beyond the statutory retirement age affect health or capacities?