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Health trends in very old people – findings from the Vitality 90 Study

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- Very old people (85+/90+) are the fastest growing age segment in most countries
- Health trends in this group not very well known

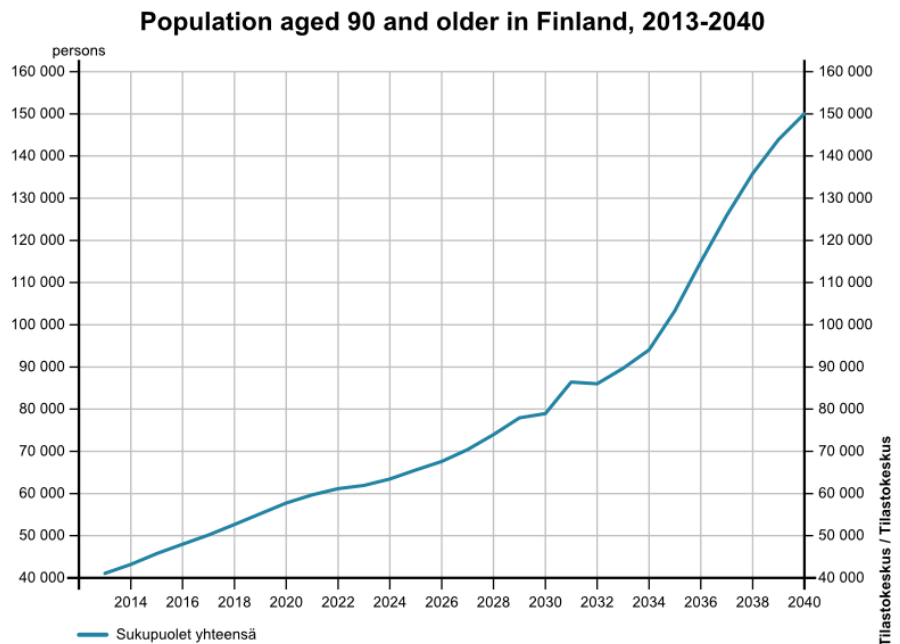
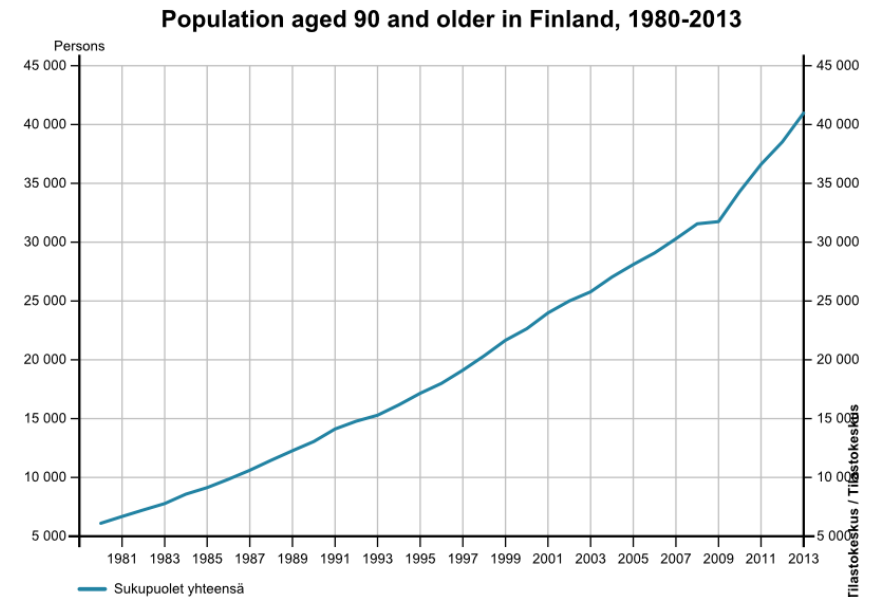
Earlier findings are scarce and they vary

- Christensen et al in Denmark, comparison between 2 cohorts at the age of 90: improving ADL, mobility, cognitive functioning
- Crimmins et al, US: both disability-free and ADL-disabled life expectancy increased 1984-1994; increasing prevalence of disease, increasing mobility disability
- 77+/80+: increase in mobility limitations (Parker et al in Sweden 2008) , no change in disability but less functional limitation(Seeman et al 2010, the US)
- Sundberg et al in Sweden: 1992-2016 increase in disability free LE, but major gender differences

Reliable information on health trends

- requires similar measurements in different points of time in representative (total) populations
- but
- many studies are biased because of non-representative samples: people living in institutions, suffering from dementia, too frail to participate...
- necessary to reach people in institutions and have proxy respondents available (Kelfve et al 2013)

- In Finland, the number of people aged 90+ is 7-fold compared to 1980, and will double again in 15 years
- Age group with the highest disability rates
- Trends in health and functioning poorly known



Vitality 90+ Study

Tampere: second largest city in Finland, 200 000 inhabitants

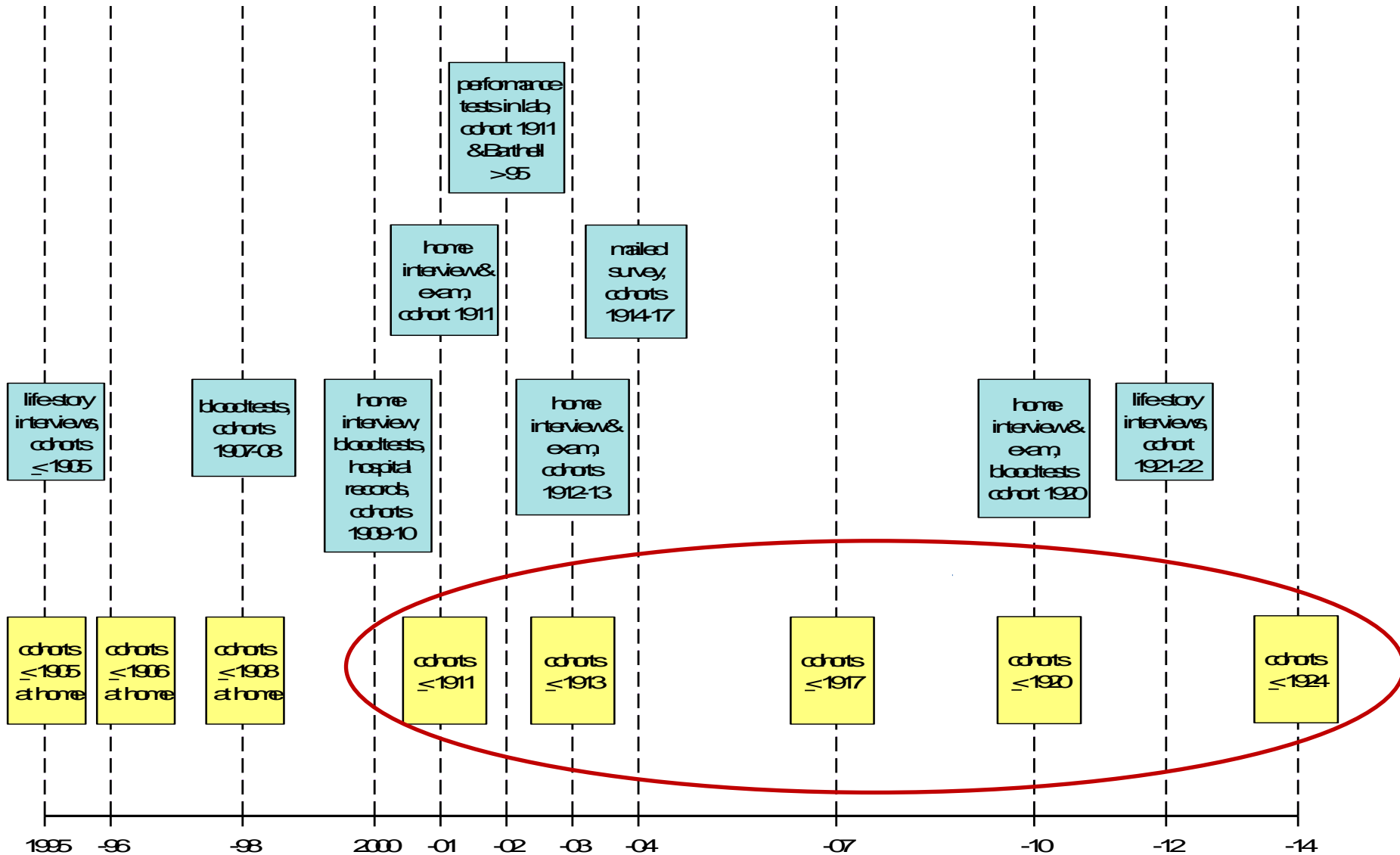
Reliable population registers

Mailed surveys with all people aged 90+ in the area in 2001, 2003, 2007, 2010, and 2014

Same questions each time



Vitality 90+ Study



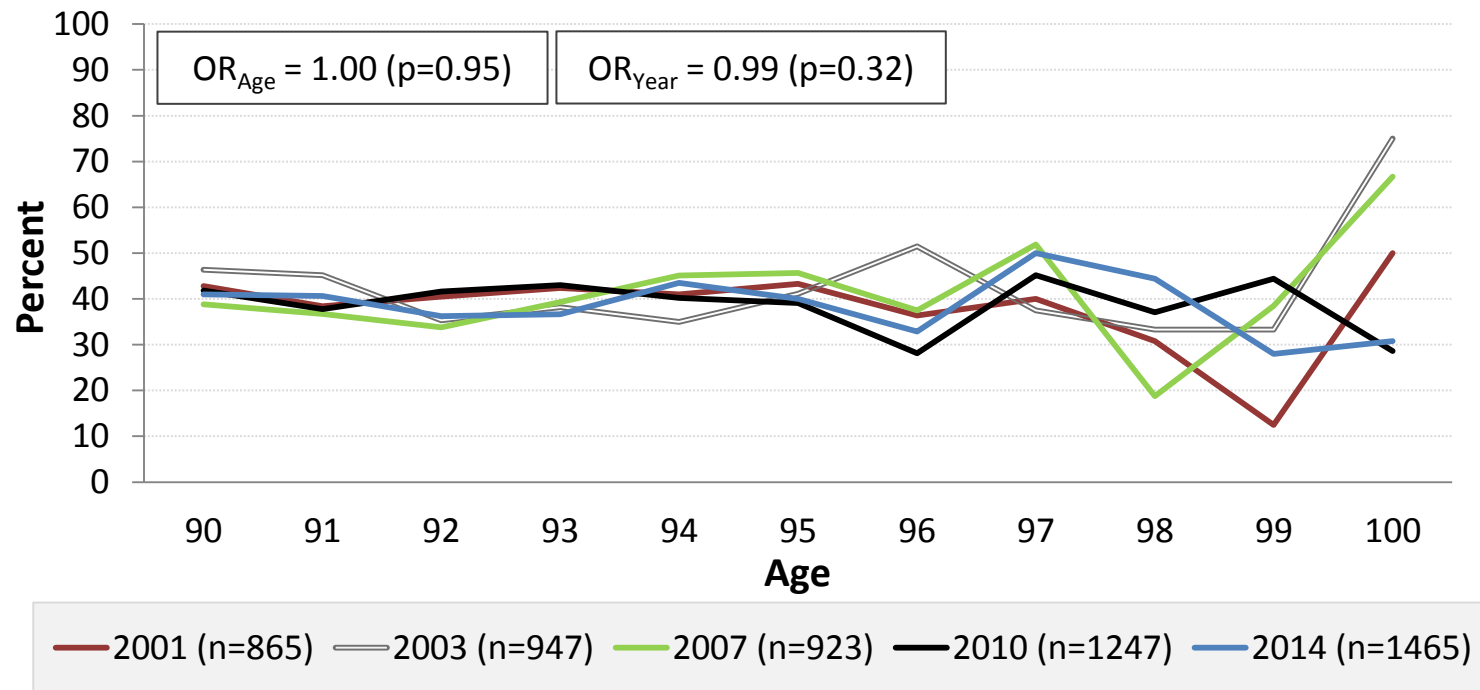
Mailed surveys in Vitality 90+, 2001-2014

	2001	2003	2007	2010	2014
Total population aged 90+ in Tampere	1129	1113	1146	1630	2056
Participants	892	963	944	1283	1636
Response rate (%)	79	86	82	80	80
Proxy answers (%)	23	24	15	22	18
Age, median	92.3	92.4	92.6	92.6	92.6
Male (%)	19	20	20	19	23
Living in long-term care facilities (%)	39	36	35	37	35

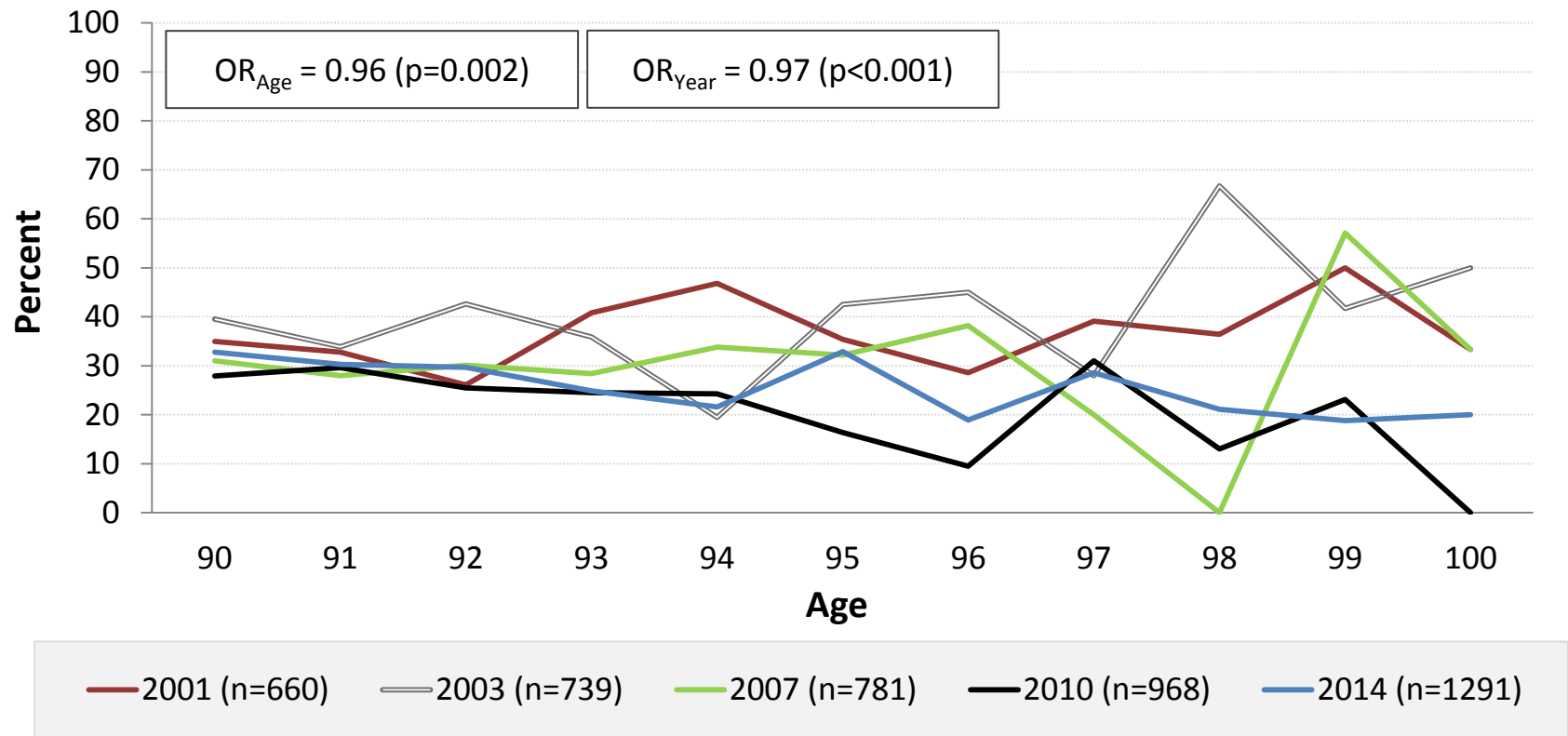
Design, analyses

- Description: repeated cross-sectional surveys with all people aged 90+ each time
- Analysis: general estimation equations (GEE), take into account the within-subject associations. Year, age and proxy included in the models
- Disability-free life expectancy at 90, the Sullivan method

Less than 2 chronic conditions (out of seven: coronary heart disease, stroke, diabetes, dementia, depression, hip fracture, arthritis)

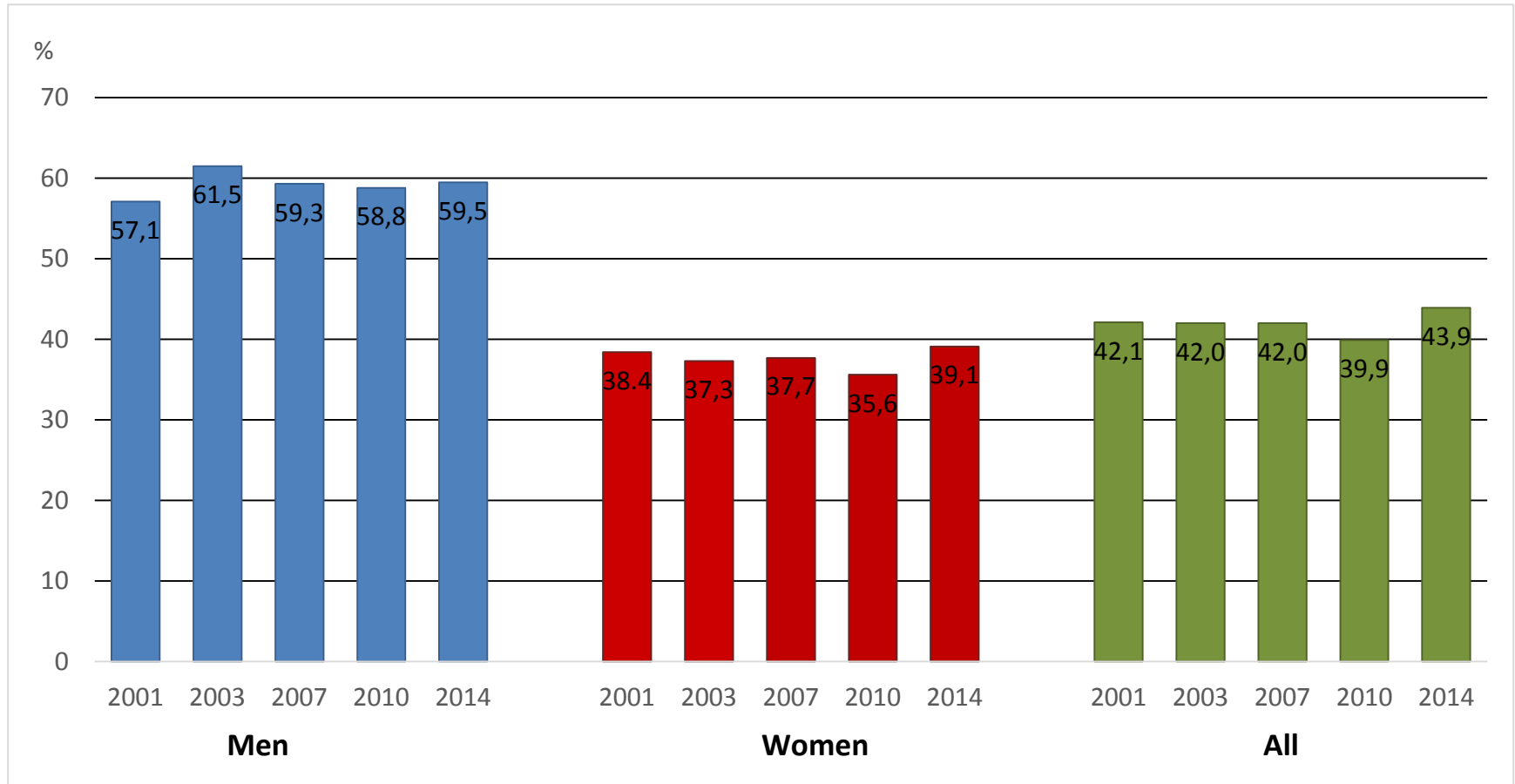


Self-rated health very good or fairly good (proxies excluded)

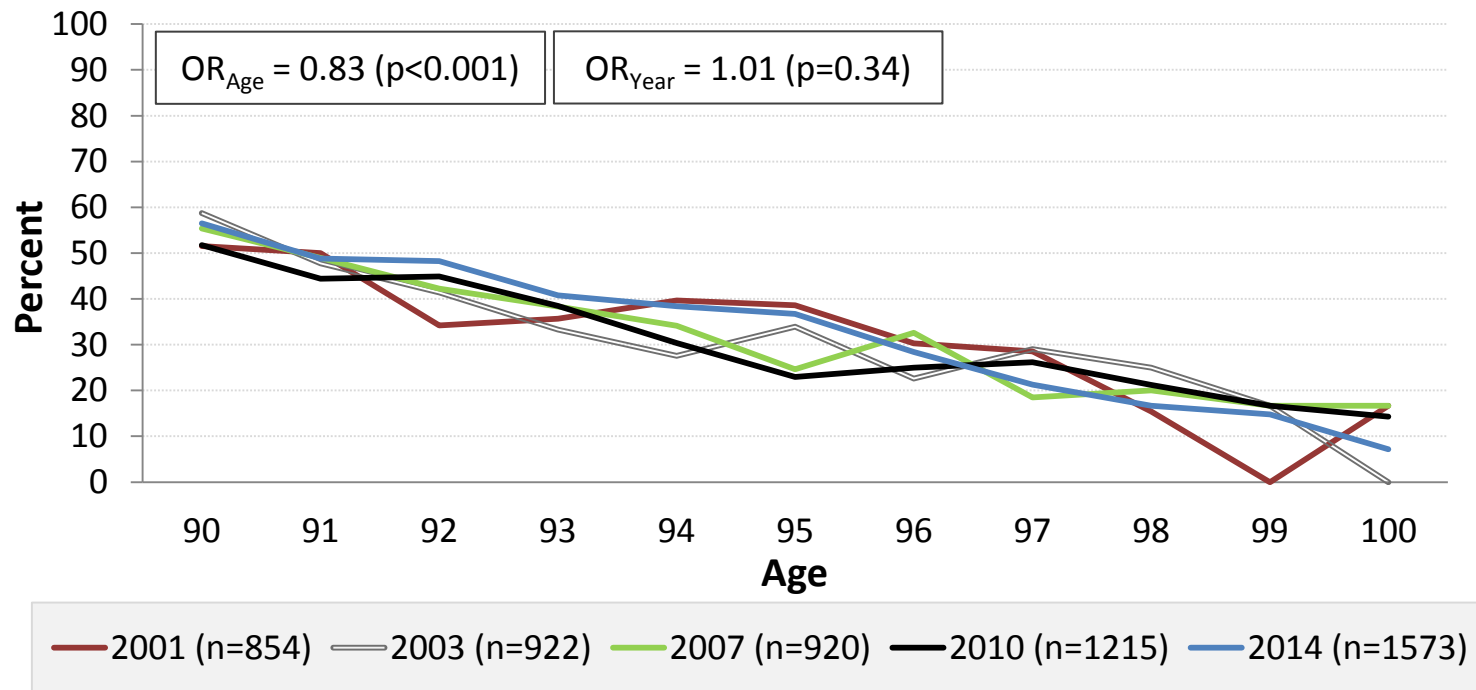


Independent in five activities (%)

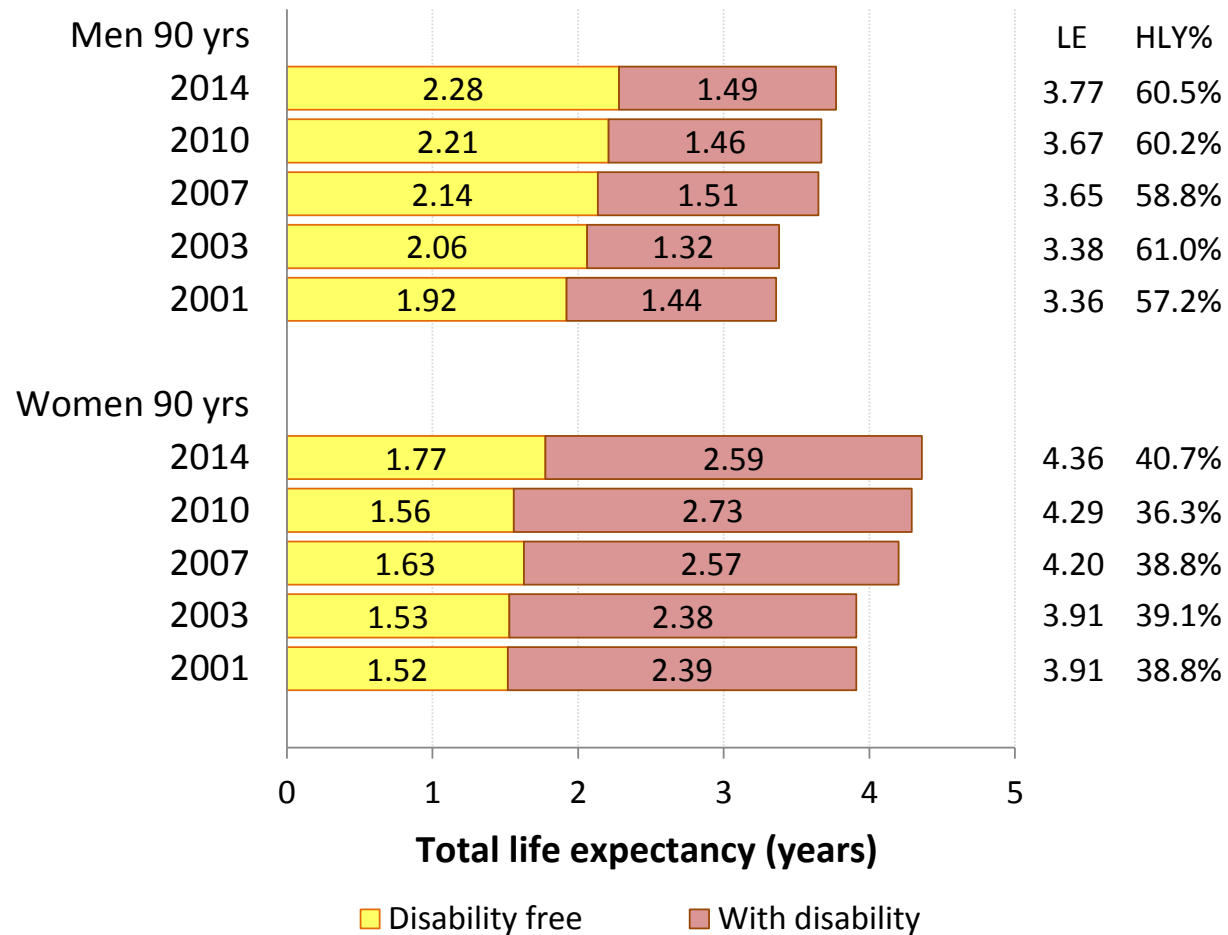
dressing and undressing, moving in and out of bed, walking across the room, walking 400m, and using stairs



Independent in five activities



Years without and with disability at the age of 90 (independent in 5 activities)



Summary: From 2001 to 2014

- 79 % increase in the number on people 90+
- Increase in life expectancy at 90
- No change in multimorbidity
- Worsening self-rated health
- No significant change in functioning
- Functioning strongly associated with age
- More healthy years for men,
more healthy and more disabled years for women at
the age of 90

- The number of very old people increases rapidly
- People live longer with chronic disease
- Both non-disabled and disabled years increase
- An extremely heterogeneous group, but at population level each extra year in age means increasing likelihood of disability
- A major challenge: good care and good quality of life for very old people during their last years of life

- No conflict of interest
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Thank you!

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