

Cardiovascular Health and Life Expectancy With and Without Dementia

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Introduction

As life expectancy (LE) increases, dementia prevalence is expected to rise. Cardiovascular health (CVH) is an important modifiable risk factor for both dementia and overall longevity. It may improve the quality of the additional years of life gained in term of cognitive health. Moreover, socially-disadvantaged groups may be more vulnerable to the adverse effects of poor CVH.

Objectives

- Evaluate the association between CVH and life expectancy with and without dementia
- Assess SES indicators as determinants and effect modifiers

Methods

Study sample

6052 dementia-free participants aged 65+ of the 3City study: a French population-based cohort, followed up to 17 years, enrolled in 1999-2000.

Exposure

Life Essential 8 score → Eight components « BMI, Non-HDL cholesterol, blood pressure, blood glucose, diet, physical activity, sleep, smoking status »

Outcomes

- Incident dementia, death

Covariates

Sex, education, income, social deprivation index (FDep)

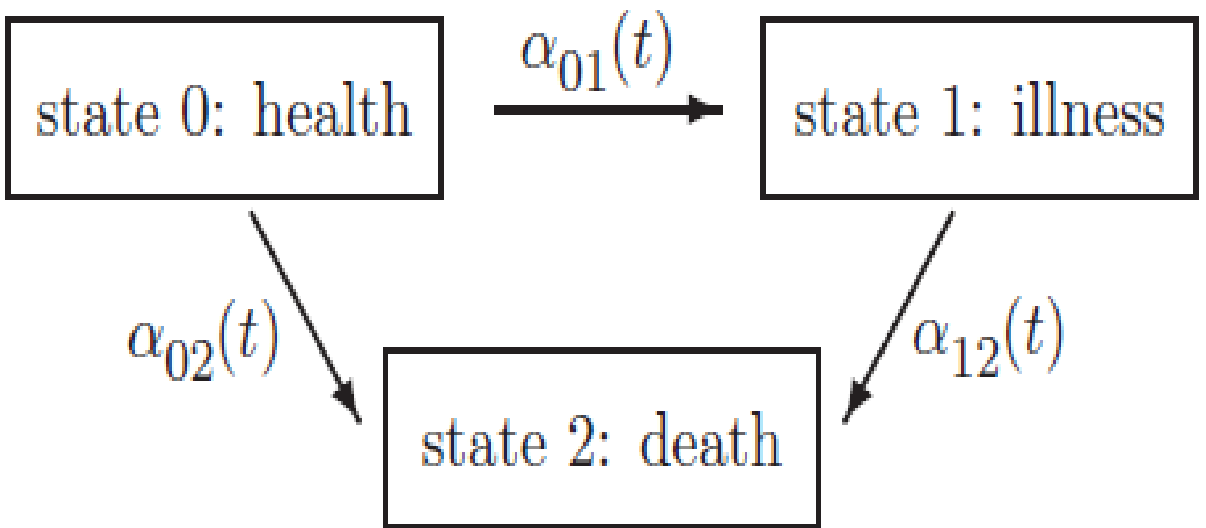
Statistical analysis

Multistate illness death model :

- Weibull parametrisation
- Age as time scale
- Interval censoring

Step 1: Estimate transition intensities (α_{01} , α_{02} , α_{12})

Step 2: Derive life expectancy estimates: total, dementia free, with dementia



Discussion/Conclusion

Improving cardiovascular health may **relatively compress** dementia at the population level:

- Delay onset of dementia
- Reduce proportion of life lived with dementia
- Educational attainment appears as the most influential SES indicator
- Gains in dementia-free life expectancy with better CVH do not differ by SES

Later life CVH may be an interesting target for promoting equitable and healthy cognitive ageing

Results

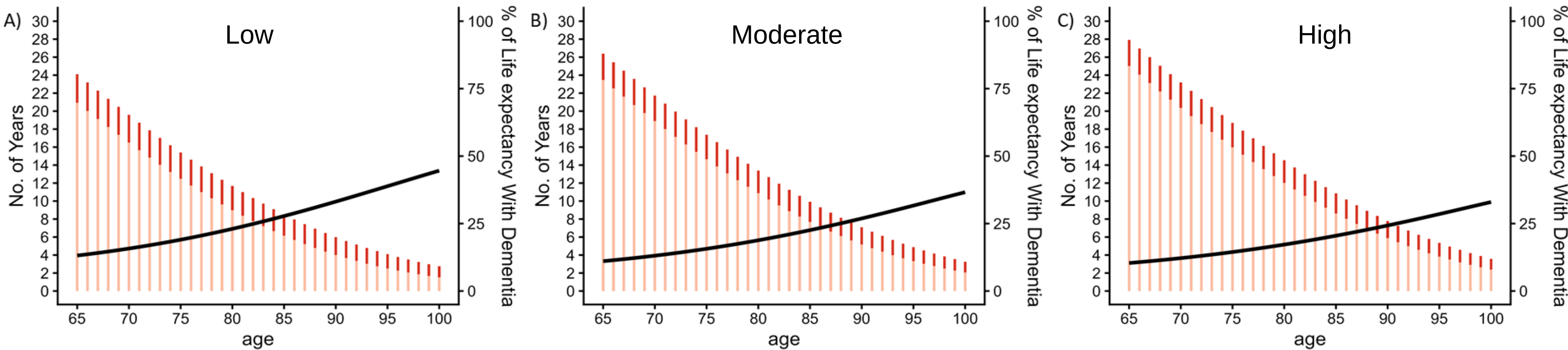
Description. 6052 participants (mean age 73.8 y.o), 60% women. 13.2%, 81.2% and 5.3% had low, moderate and high CVH.

Table 1. Association of CVH levels with incident dementia and death

LE8 categories	Transition		
	Healthy → Dementia	Healthy → Death	Dementia → Death
Low CVH	Ref	Ref	Ref
Moderate CVH	0.77 [0.64 ;0.94]	0.63 [0.55 ;0.73]	0.99 [0.80 ;1.22]
High CVH	0.70 [0.50 ;1.00]	0.40 [0.28 ;0.57]	1.13 [0.75 ;1.50]

- With higher CVH levels (for both sexes): Total life expectancy increased, dementia free LE increased. LE with dementia remained relatively stable across CVH levels (Figure 1).

Women



Men

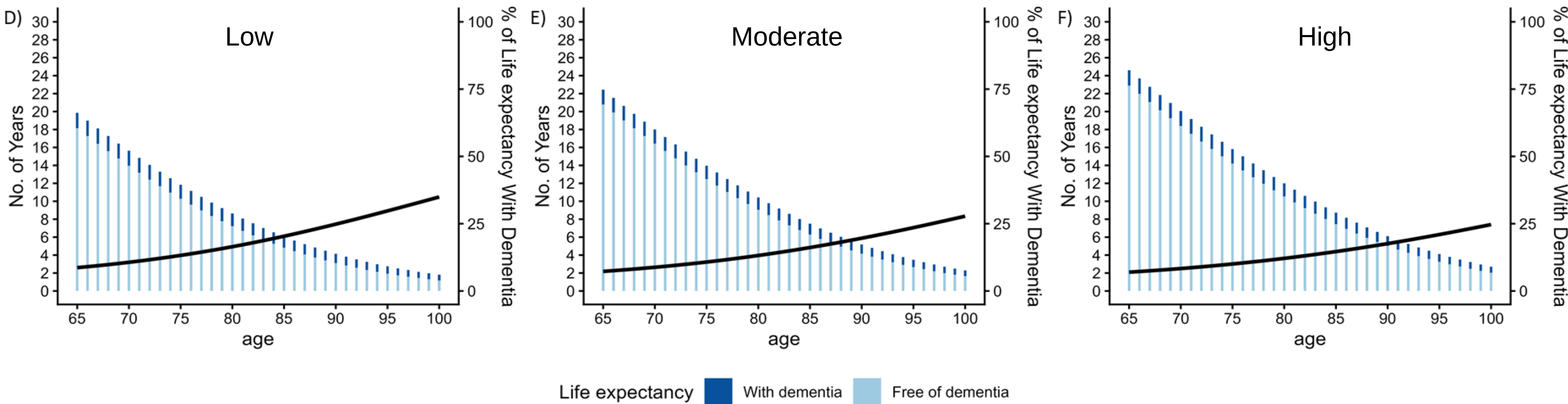


Figure 1. Life expectancy with and without dementia by CVH levels and by sex. The solid line reflects the percentage of remaining life-years lived with dementia (right y-axis)

Influence of SES on risks of dementia and death

- **Education** ↓ risk of dementia (−23%; 0.76–1.00) and death without dementia (−26%; 0.75–0.94), but ↑ risk of death with dementia (+17%; 1.02–1.33)
- **Income** ↓ risk of dementia (−27%; 0.72–0.96), with no association with other transitions
- **FDep:** no significant associations
- **No interaction** between CVH and any SES indicator