

14th Research Day in Medicine, University of Fribourg

The exposome and women's health across the life course

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**#Pop
Health
Lab**

Wednesday 11 March 2026
PER 09, Chemin du Musée 5, Fribourg

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Overview

- Women's health, exposome, and life course
- Early life conditions and women's health in older age
- Life course exposures to cancer

Population patterns of women's health

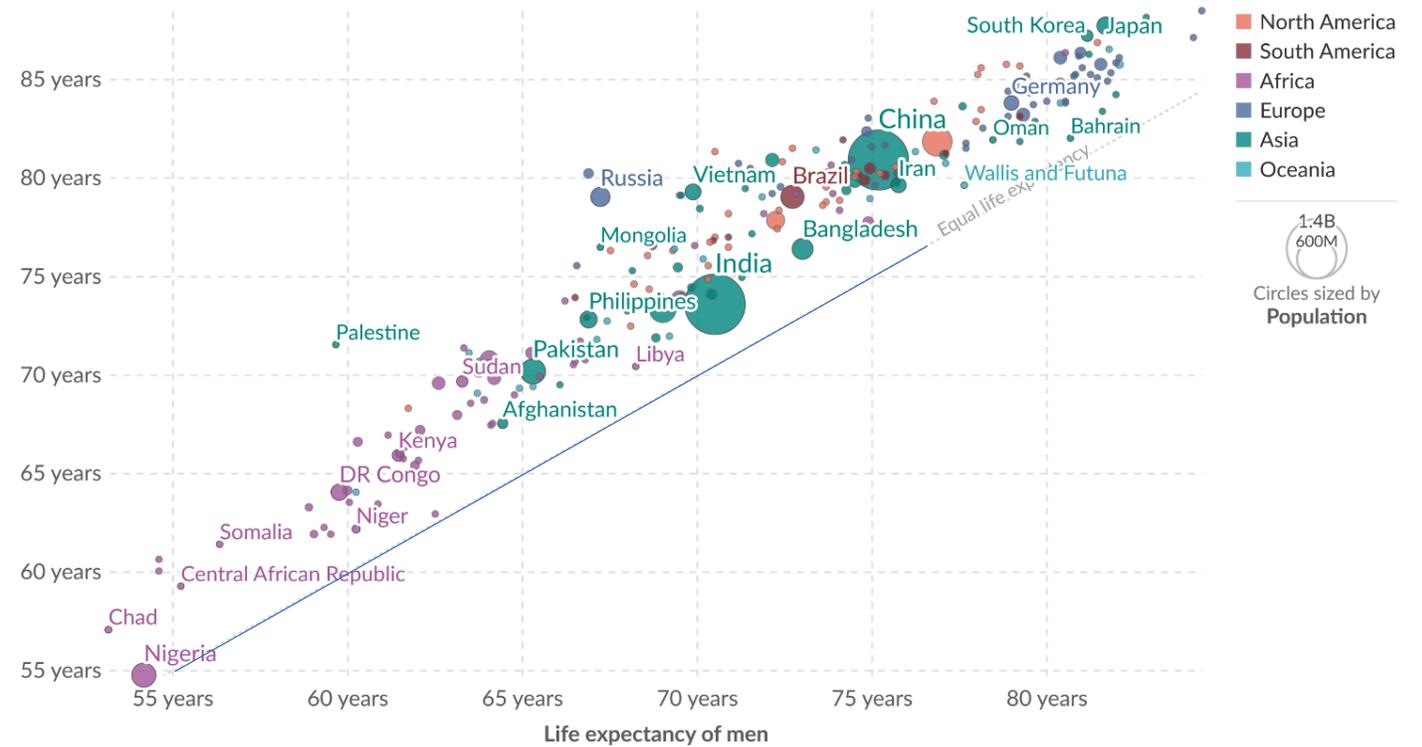
Life expectancy (OECD 2021):

- Women: 82 years
- Men: 77 years

Life expectancy of women vs. men, 2023

The period life expectancy¹ at birth, in a given year.

Life expectancy of women



Data source: UN, World Population Prospects (2024)

OurWorldinData.org/life-expectancy | CC BY

1. Period life expectancy Period life expectancy is a metric that summarizes death rates across all age groups in one particular year. For a given year, it represents the average lifespan for a hypothetical group of people, if they experienced the same age-specific death rates throughout their whole lives as the age-specific death rates seen in that particular year.

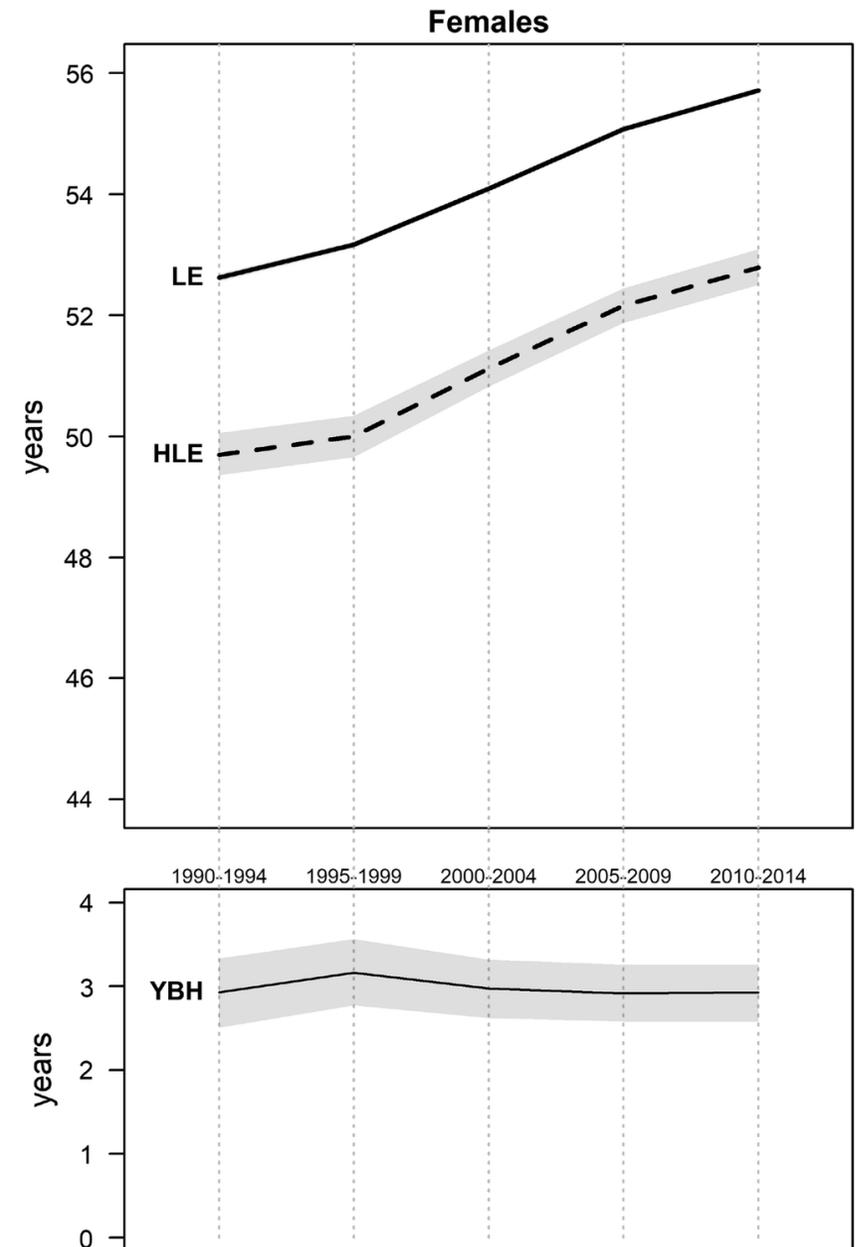
Learn more in our articles:

- [Life expectancy – what does this actually mean?](#)
- [Period versus cohort measures: what's the difference?](#)



Trends in Swiss women's life expectancy / healthy life expectancy

Remund A. & S. Cullati (2022). Les inégalités d'espérance de vie en bonne santé en Suisse depuis 1990. *Social Change in Switzerland*, N°31.
<http://doi.org/10.22019/SC-2022-00005>



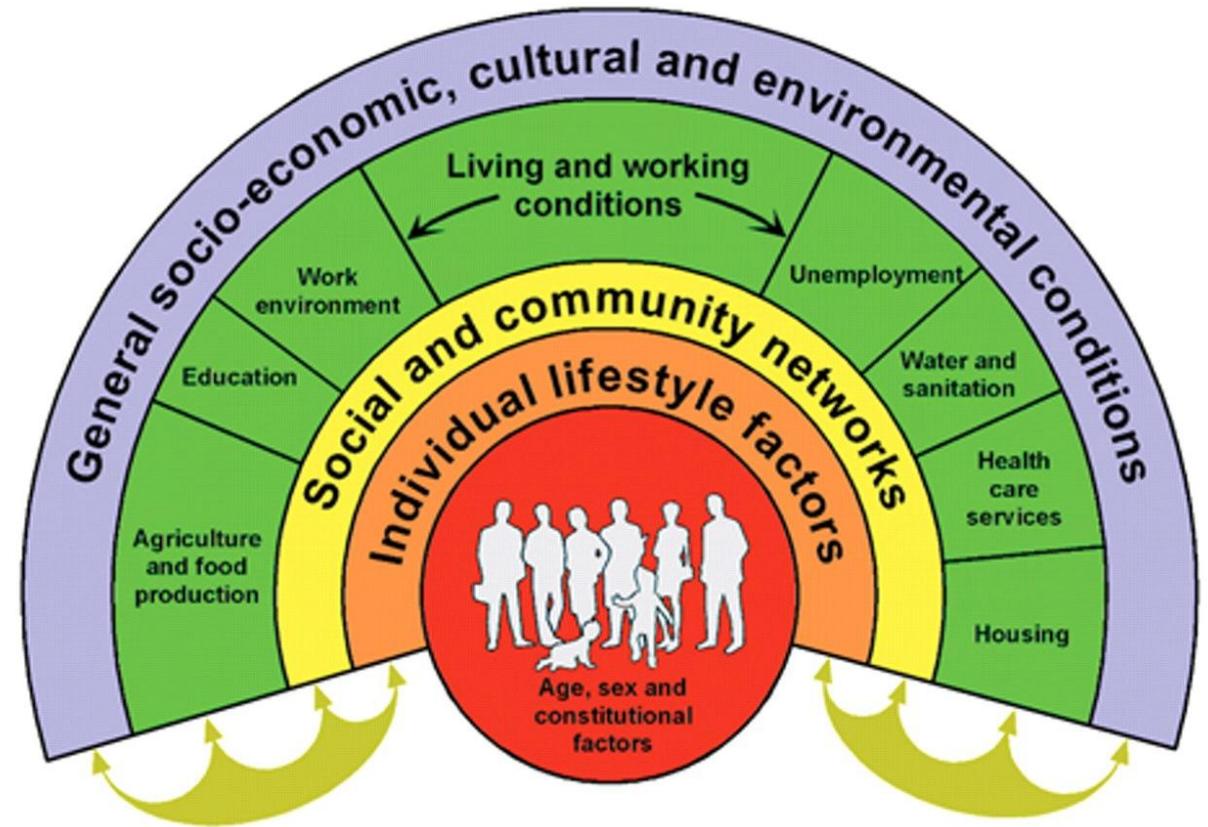
LE: life expectancy at age 30

HLE: healthy life expectancy at age 30

YBH: number of years living in poor health

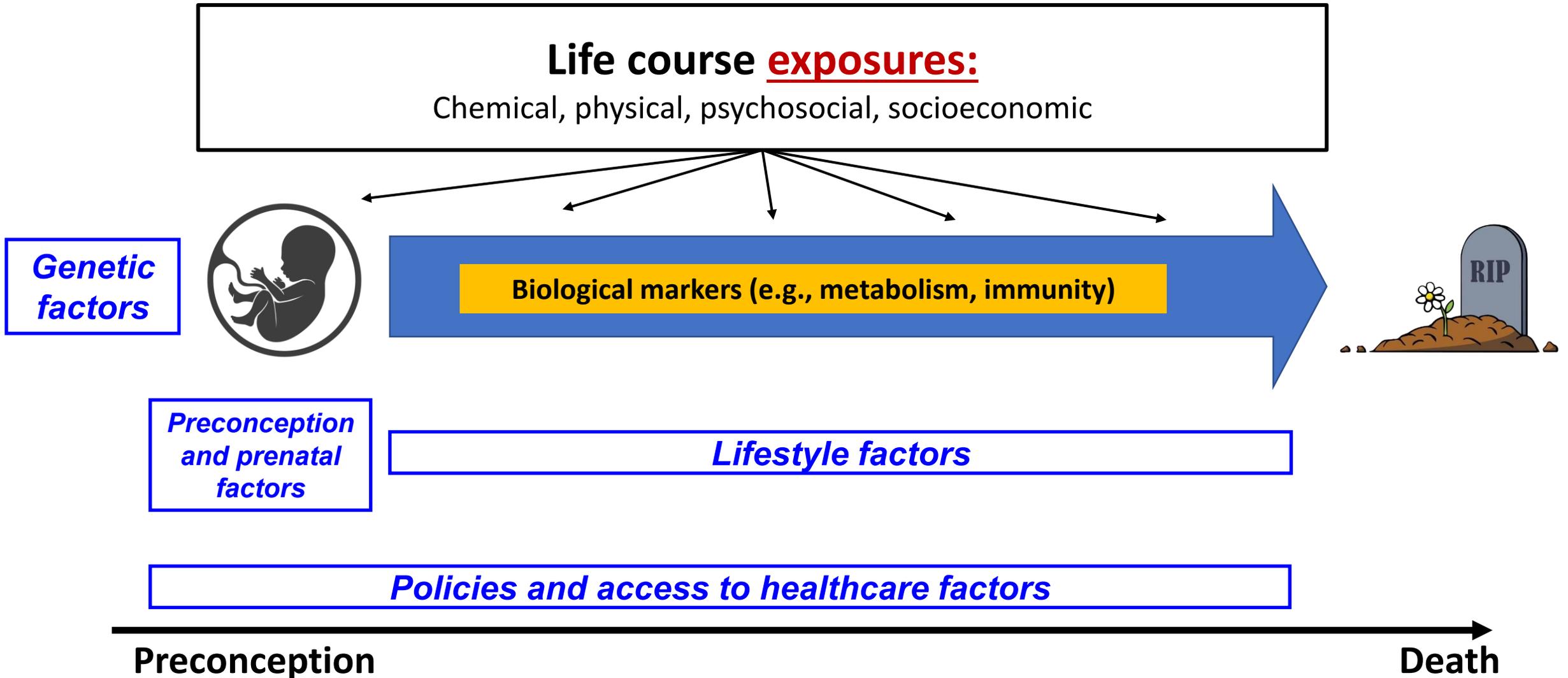
The exposome

- The science of the social to the biological transitions
- Sum of all exposures (environmental, social, welfare and healthcare)
- Provide a multilevel biopsychosocial framework to improve women's health.



Dahlgren-Whitehead model

Life course approach to health



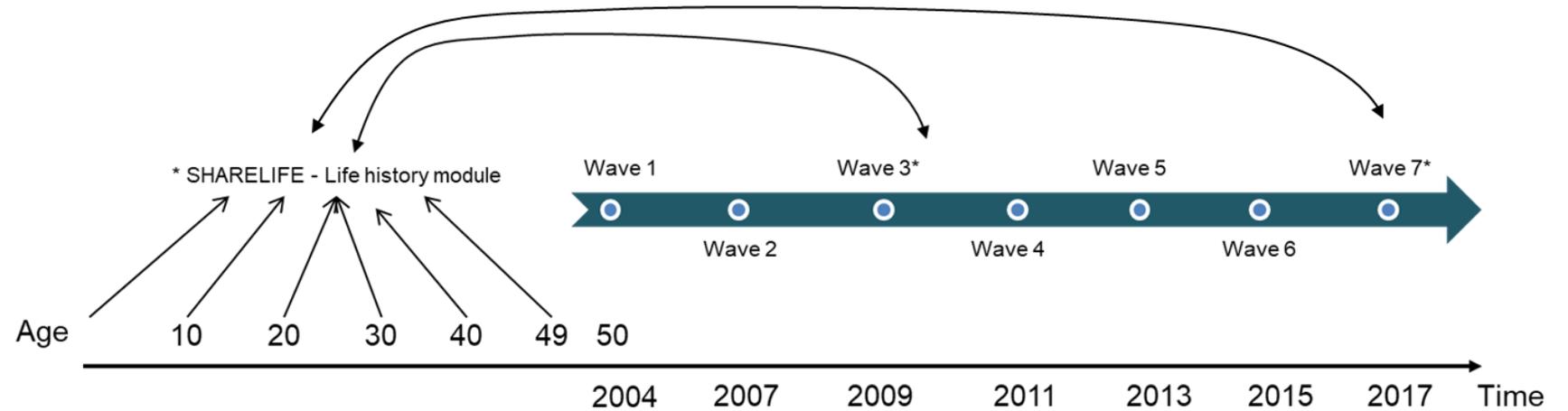
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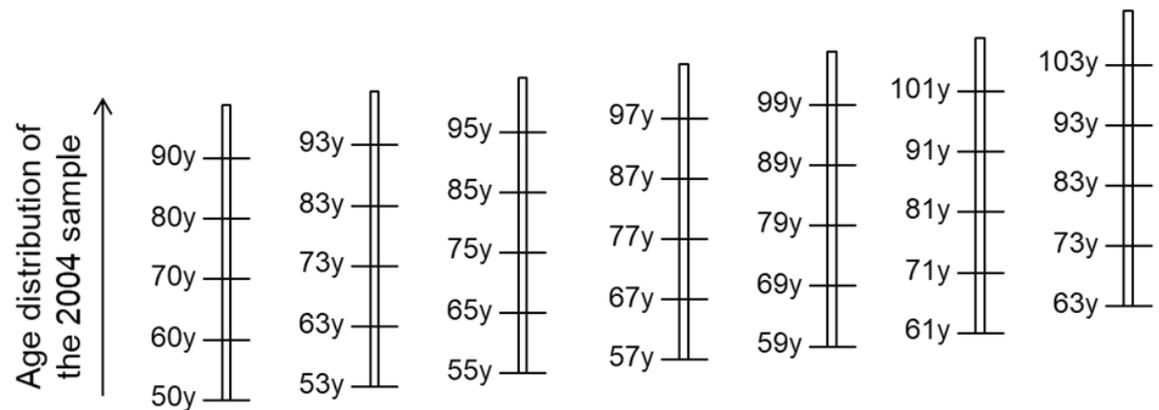


SHARE

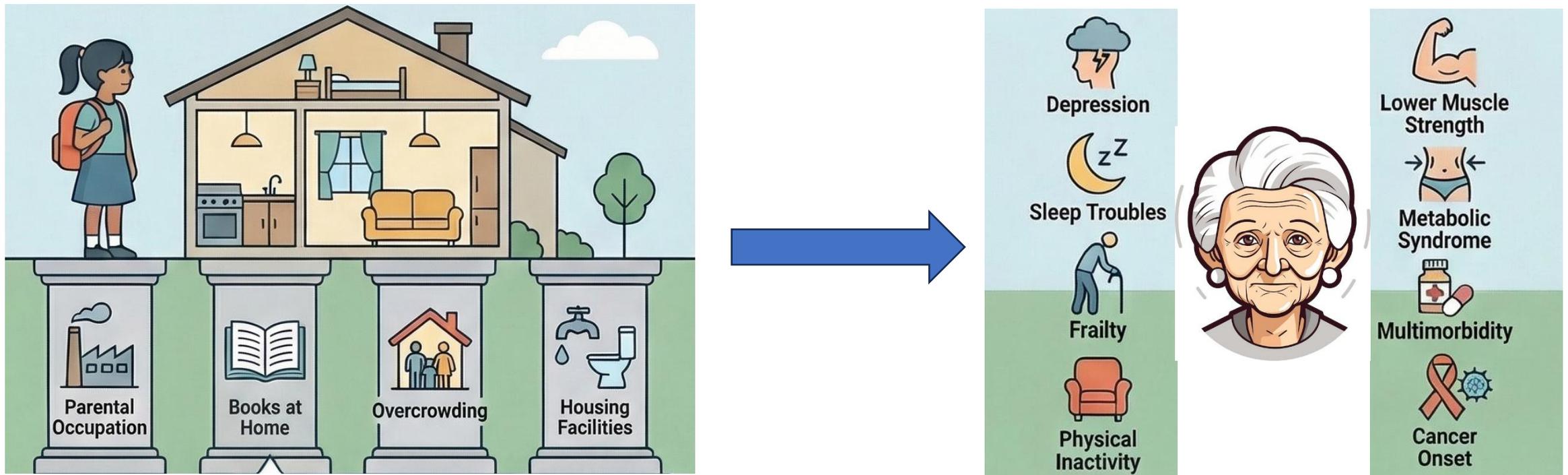
SURVEY OF HEALTH, AGEING
AND RETIREMENT IN EUROPE



- Longitudinal panel study
- 140'000 people aged 50+
- 27+ European countries



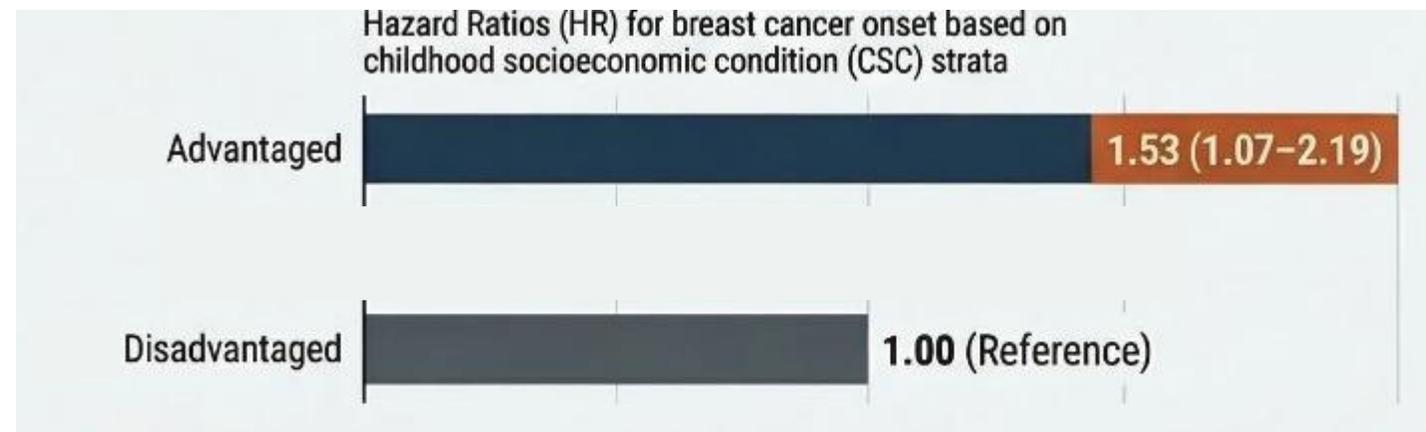
The lifelong legacy of childhood disadvantage on women's health in later life



Cullati S et al “Childhood Socioeconomic Disadvantage and Health in the Second Half of Life: The Role of Gender and Welfare States in the Life Course of Europeans”, in Spini D & E Widmer (Eds), *Withstanding Vulnerability throughout Adult Life*, Singapore, Palgrave Macmillan, 2023, p. 217-238 [[DOI](#)] (Open access)

Early life advantage and breast cancer risk

Direct association of childhood socioeconomic conditions with breast cancer



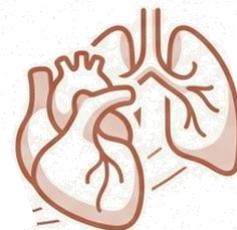
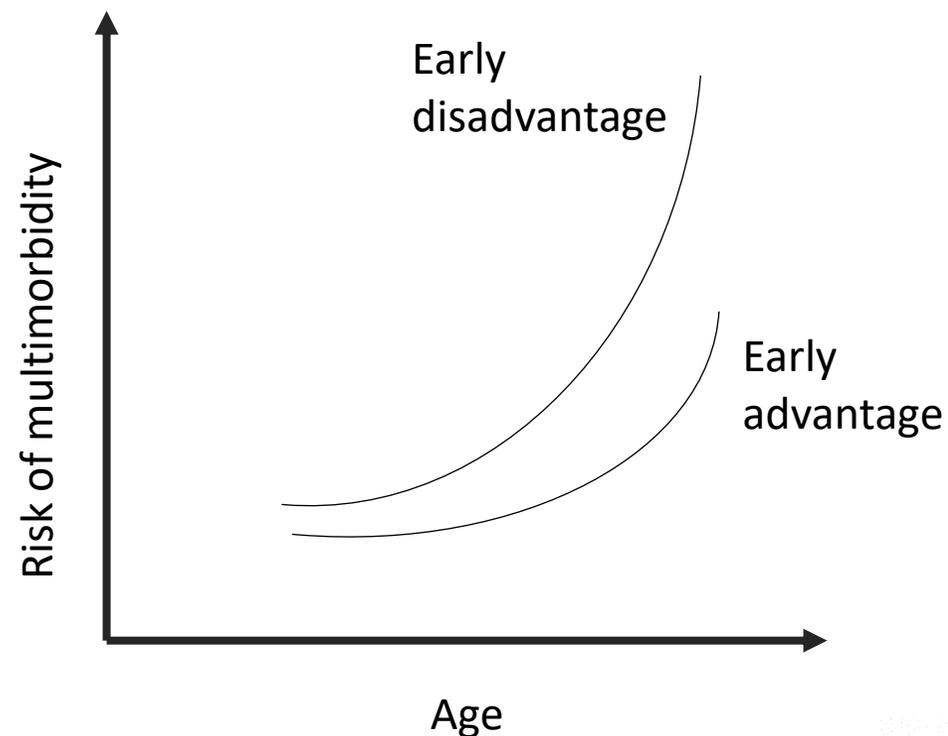
Explanations: advantage backgrounds are associated with

- 1) Increased screening
- 2) specific risk factors: older age at first birth, reduced parity and higher alcohol intake



Early life disadvantage and increasing risk of multimorbidity over ageing

- **Sample:** 15'910 women, mean age 66 years (50-96 years), 17 European countries
- **Self-reported multimorbidity:** coexistence of 2 or more chronic conditions (lasting minimum 3 months)



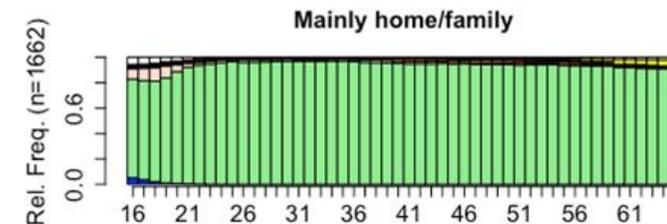
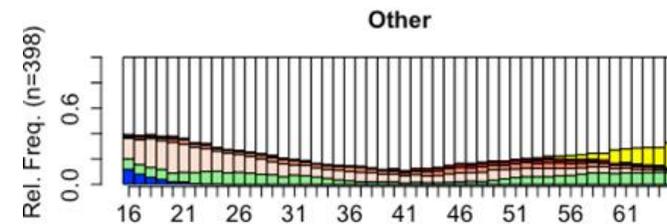
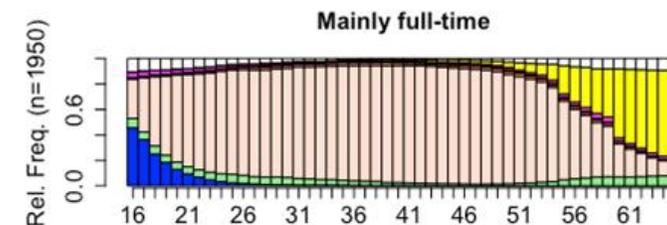
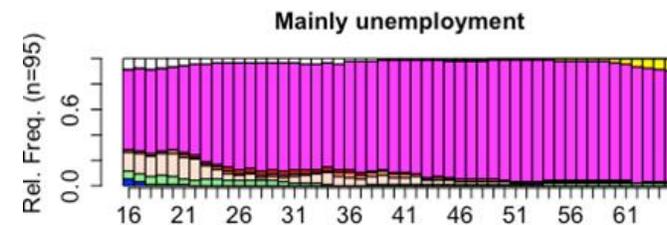
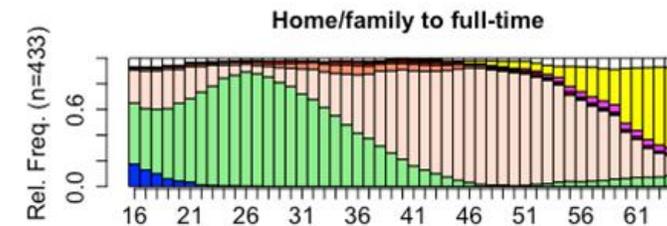
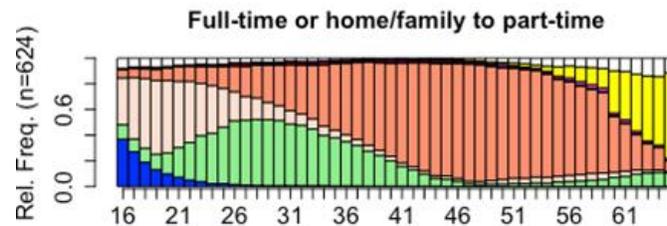
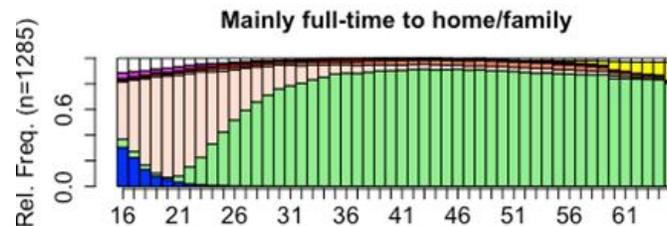
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Lifetime Employment Trajectories



Survey of Health, Ageing and Retirement in Europe (SHARE), 2004-2020: 6809 women, mean age 70 years (55-99), from 14 European countries



Lifetime Employment Trajectories and Cancer

Several employment trajectories associated with cancer risk (all sites)

→ *More research is needed to understand these associations and determine if causal relationships exist*

Types of employment trajectories	OR (95% CI)
Full-time/home to part-time	2.28 (1.70–3.05)
Mainly full-time	1.73 (1.40–2.16)
Mainly full-time to home/family	1.51 (1.19–1.93)
Mainly self-employment	0.76 (0.51–1.09)
Mainly unemployment	1.05 (0.48–2.03)

Reference= mainly home family. Covariates adjusted model (age, birth cohort, BMI, smoking, number of chronic conditions, and physical activity)

Conclusions

- Complexity matters: point-in-time data misses the reality of women's lives.
- Early life may be a sensitive period for women's health.
- Exposome determinants: women's health is not just biological, but also the results of cumulative social influences over the life course.



**Thank you for your
attention**

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