

Evidence from Lifepath Project

Poorer people are more likely to experience worse health throughout the course of their life, especially in older age. The risk of poor health tends to decline with step-by-step increases in socioeconomic position (SEP), creating what has come to be known as a *social gradient in health*. In theory, if the more affluent can achieve healthy ageing, such a goal should be achievable by everybody.

Socioeconomic position is an independent risk factor, like smoking or hypertension

Noncommunicable diseases - such as cardiovascular diseases, cancers, chronic respiratory diseases and diabetes - are shaped by economic, social and environmental conditions, injustice and patterns of inequality. They share several common attributes like chronicity, global burden and a preventable nature (Vineis 2017), and are linked to common risk factors, namely smoking, high alcohol use, poor diet, physical inactivity, raised blood pressure, high salt consumption and diabetes (WHO 2013). Lifepath has indicated that socioeconomic position (SEP) is an independent risk factor for mortality and physical functioning (Stringhini 2017; 2018).

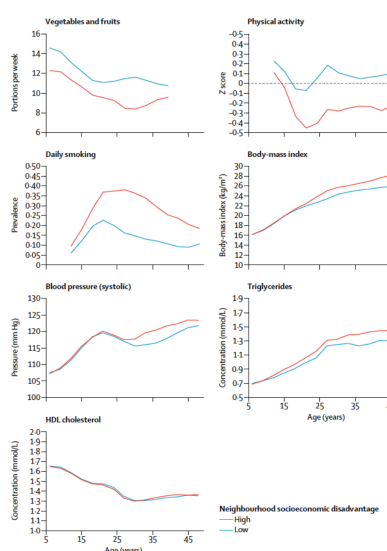
Mediating factor	Years of life lost (YLL)
Alcohol (high use)	0.5
Diabetes	3.9
Hypertension	1.6
Obesity	0.7
Physical inactivity	2.4
Smoking	4.8
SEP	2.1

Years of life lost associated with 6 major risk factors and low SEP (Stringhini et al., 2017).

Early life is the game changer

Lifepath results shows that socioeconomic circumstances affect health from the very beginning - for instance, infants, children and adolescents from low SEP backgrounds were more likely to be overweight. Low SEP in early life may shape lifestyle and health-related behaviours, which then affect health in adulthood (Kivimaki 2018).

Low socioeconomic conditions in childhood may also result in educational disadvantage, which in turn drives economic disadvantage in adulthood (Layte 2017).



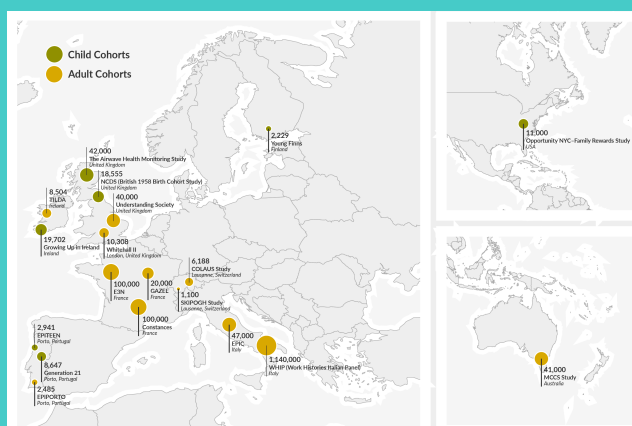
Risk factors of cardiometabolic health by age and cumulative neighbourhood socioeconomic disadvantage.



The Lifepath project

Lifepath is a research consortium funded by the European Commission under Horizon 2020, which aims to understand the impacts of socioeconomic differences on healthy ageing with a life-course approach that considers the relative importance of lifetime effects by comparing studies on childhood and adult risks. Lifepath also studies the molecular and physiological processes showing that low socioeconomic position can create chronic psychosocial stress with long-term effects through a sort of physiological wear-and-tear effect that involves inflammatory responses, reduced immune function and an acceleration of ageing (McCrory 2019, in press).

Click bit.ly/2H0ntml for a larger version of the map.



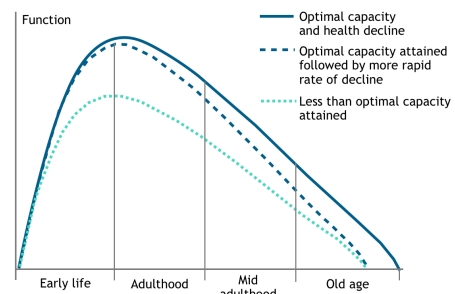
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EFFECT OF RECESSION AND AUSTERITY ON INEQUALITIES One of Lifepath's goals was to assess the impact of the 2008 recession in Europe. Lifepath researchers completed a trend study of health inequalities in 27 European countries that included the period of the 2008 banking crisis. Most European countries have experienced many decades of mortality decline and the evidence suggests this was not derailed by the recession. However, mortality from smoking-related causes increased for younger less educated women and mortality from alcohol-related causes went up among less educated men and women. This study likely reflects a level of resilience in most European countries built up through the provision of financially accessible health care and social support systems (Mackenbach 2018).

POLICY INTERVENTIONS TO REDUCE INEQUALITIES The evidence from Lifepath is that interventions to reduce health inequalities are needed both in childhood, to support healthy ageing through the whole course of life, but also later in life, to help people who are already in middle or old age and who are ageing in poverty. It is thus important to develop interventions aimed at different stages of life, taking into account several aspects like context, timing cross-generational effects and opportunity.



The social gradient of health. 

EARLY LIFE Poor health trajectories related to low socioeconomic position start in early life and are well established by age three. Lifepath evidence shows that investment in a child's early years could be more effective and cheaper than later interventions (Doyle 2009). Low income families are vulnerable, especially in periods of recession, and governments should maintain their living standards. Building and maintaining human capital in childhood and adulthood is essential.

EARLY ADULTHOOD Young adults grown in disadvantaged social circumstances already show a higher biological risk compared to their more advantaged counterparts (Karimi 2019, in press) and this is likely to be exacerbated by unhealthy behaviours. Moreover, living in deprived neighbourhoods is associated with differences in

health risks across the course of life. Most of all, the effects of early life social disadvantage on biology may amplify from early adulthood by age 25 (Kivimaki 2018). Addressing social exposures and health behaviours early in adulthood can limit their long-term effects and mitigate amplifications.

MID ADULTHOOD By mid adulthood, a low SEP is associated with premature mortality (Stringhini 2017), physical functioning (Stringhini 2018), physiological wear-and-tear (Castagné 2016; Berger 2017), and in molecular processes including epigenetic age acceleration (McCrory 2017; Fiorito 2017). All these health consequences are also mediated by smoking, body-mass index and metabolic disorders, such as fatty liver and diabetes (Kivimaki 2018).

Key policy messages

Socioeconomic position is an independent risk factor for premature death and physical functioning. A low SEP encourages the uptake of well recognised risk behaviours such as smoking, high alcohol consumption, a diet low in fruit and vegetables.

Lifepath studies also looked at **biological markers that explain how social disadvantage is embedded in our bodies** from the outset. Literally, "poverty gets under the skin".

Poor health trajectories **related to low socioeconomic position start in early life.** Appropriate policies can reverse the embodiment of socioeconomic disadvantage, resulting in healthier ageing. The whole life-course is relevant, but probably early life is more so.

Health inequalities can be tackled by acting on both intermediate risky behaviours and on social deprivation itself.

In addition to behavioural, environmental and occupational factors, **psychosocial stress**, particularly among children and vulnerable adult groups, **is likely to be a key factor in the establishment of health inequalities.**

For policy purposes, **SEP should be included in the list of risk factors targeted by global health strategies** as their impact on mortality is comparable in strength and consistency to that of well-known risk factors like smoking, alcohol consumption, obesity and hypertension.

Lifepath findings seem to suggest that mitigation and prevention policies need to be adapted to contexts, i.e. **there is no single intervention model that fits all populations.**

Based on its studies, Lifepath can make useful **suggestions about the right timing of interventions** and the necessity of an integrated approach to healthy ageing.