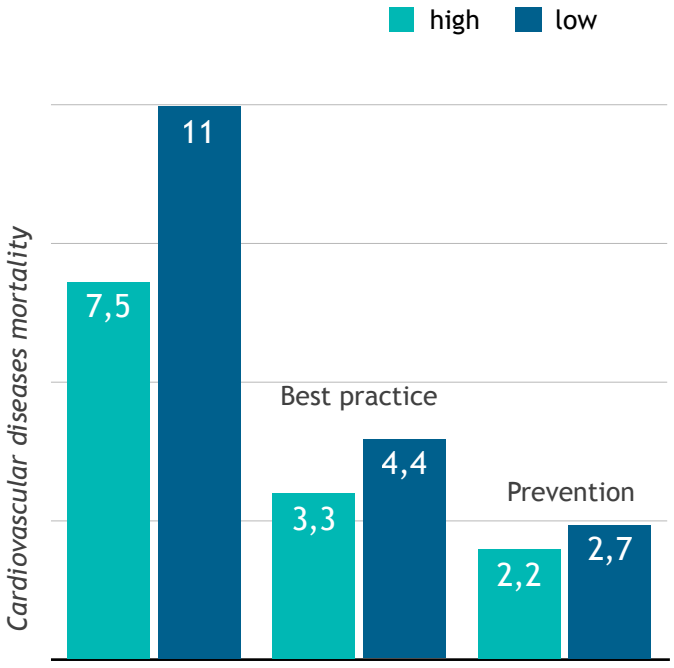
Lifepath
HEALTHY AGEING FOR ALL

Healthy ageing for all

From social inequities to health inequities. A global challenge

Socioeconomic status has a strong influence on the quality of life and life expectancy. Improving wellbeing and health conditions is an achievable goal for society, as individuals belonging to higher socio-economic groups already experience it. Socioeconomic circumstances and their consequences are modifiable by policies at the local, national, and international levels. However, health policymakers often do not consider them among the risk factors to target with proper strategies.



Kivimaki et al. Lancet 2008

Lifepath is an EU-funded project aimed to provide updated, relevant and innovative evidence for the relationship between **social disparities** and **healthy ageing**, in order to lay ground for the development of future health policies and strategies.
Lifepath project stems from three main hypotheses:

- healthy ageing begins at **conception**, if not before
- ageing involves a progressive **differentiation** across social groups
- biological changes underpin the effect of complex environmental, behavioural and social patterns and can be traced with **-omic technologies**.

For any media enquiries, please contact Luca Carra by mail (carra@zadig.it) or mobile (+39 339 8578565)

Lifepath
HEALTHY AGEING FOR ALL

What does healthy ageing mean?

Lifepath defines healthy ageing as the optimal state of performance and wellbeing for any particular phase of the life course that can be expected in a society, across all social and cultural groups of a population. Such a definition comes from a new concept of health, which is represented as a trajectory, more than a static condition.

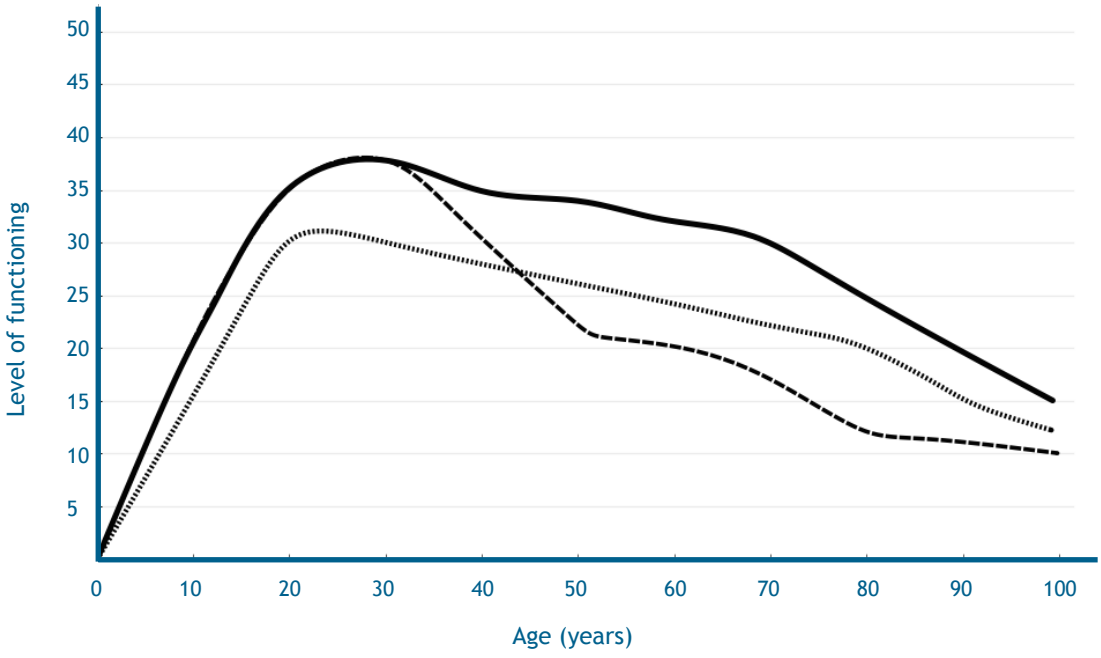
Life and ageing are continuous processes, made up by two main stages: **a build-up phase** and **a decline phase**.

The former begins at conception and ends at late adolescence, and is an extremely sensitive periods, both biologically and socially. Being exposed to low socio-economic circumstances in this stage may negatively impact the maximum attained health.

A maximum that is slowly eroded during the decline stage, starting in early adulthood. Socioeconomic status is a strong determinant of the rate of such decline.

Life trajectory

The curve of life course, with the "build-up" and the "decline" stages. Social exposures during the first stage can influence the proportion of optimum growth attained, (dotted line). Social exposures during the second stage can influence the rate at which functioning is lost (dashed line).



For any media enquiries, please contact Luca Carra by mail (carra@zadig.it) or mobile (+39 339 8578565)

Lifepath
HEALTHY AGEING FOR ALL

A life course approach to the study of socioeconomic determinants of health

Studies carried out by **Lifepath** experts showed some evidences that early social inequalities impacts adult physiology. In fact, proteomics and transcriptomics analyses revealed that childhood socioeconomic position and upward social mobility both have a long-term effect on inflammation, that may impact health later in life.

Understanding biological mechanisms by which social environment influences the inflammatory system, especially during childhood, has important implications in treatment and, most of all, in prevention, by potentially identifying modifiable factors in the environment that affect physiological health.

Lifepath experts also compared life expectancy among people of different socioeconomic status, and cross-correlate it with six other major known risk factors, like smoking and diabetes. What they found is that about 20% of premature mortality is due to low socioeconomic condition – measured in terms of occupational position – comparing to 30% for smoking and 25% for physical inactivity.

Risk factors like smoking, diabetes, alcohol intake or a sedentary lifestyle are already included in World Health Organization global mortality reduction strategy, while socioeconomic status is not.

Lifepath Team, Lausanne May 2017

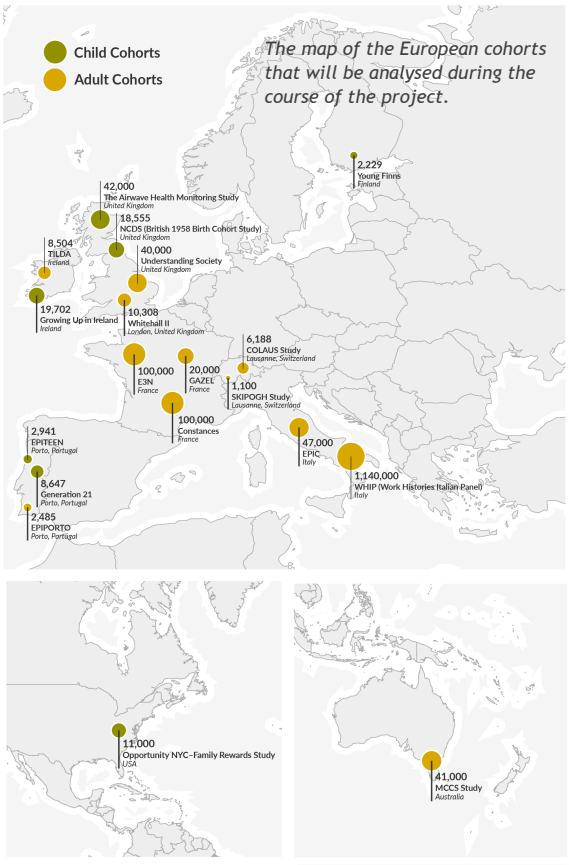
For any media enquiries, please contact Luca Carra by mail (carra@zadig.it) or mobile (+39 339 8578565)

Lifepath
HEALTHY AGEING FOR ALL

Unveiling the biological roots of health inequities

These results were obtained through an original study design developed by **Lifepath** experts, which integrates social science approaches with biology and big data analysis, using existing population cohorts and **-omics measurements**. This dynamic approach to life-course analyses will be central in **Lifepath** through the integrated use of longitudinal cohorts capturing different life stages with repeat measures and biological samples. Specifically, data will be gathered from four different sources:

- Europe-wide and national surveys (updated to 2010), including EU-27;
- longitudinal cohorts (across Europe) with intense phenotyping and repeat biological samples (total population >33,000);
- other large cohorts with biological samples (total population >202,000) and a large registry dataset with over a million individuals and very rich information on work trajectories and health;
- a randomized experiment on conditional cash transfer for poverty reduction in New York City.
- As for the biological samples, several biomarkers will be used to identify and characterize the intermediate steps between SES, risk factors and unhealthy ageing:
- epigenetic markers, both short-term (and amenable to modification), and long-term (expression of irreversible changes that can be attributed to early-life and late-life exposures);
- markers of stress and HPA-axis dysregulation;
- markers of inflammation and immune response (particularly important in cardio-metabolic disease);
- markers of neural function and structure.



The map of the European cohorts that will be analysed during the course of the project.

Lifepath has received funding from the European Union's Horizon 2020 Research and Innovation Programme under the Grant Agreement No. 633666

Contacts

Email: http://www.lifepathproject.eu/contact
Website: http://www.lifepathproject.eu/
Twitter: https://twitter.com/lifepath_eu