

# The LSH-study: Life condition Stress and Health

**SND-ID:** ext0256-1.

**Is part of collection at SND:** [Swedish Cohort Consortium \(Cohorts.se\)](https://cohorts.se/)

## Associated documentation

Study design study populations and timeline.pdf (475.9 KB)

## Creator/Principal investigator(s)

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## Research principal

[Linköping University](#) - Department of Medical and Health Sciences

## Description

Also the welfare state of Sweden has prominent socioeconomic (SES) differences in health. These are seen for most measures of SES, i.e. for education, occupation and income, and also for most health outcomes: for all-cause mortality, for morbidity in most diseases and for self-rated health. SES differences are, in particular, evident for coronary heart disease (CHD) with a two-fold difference in incidence and death between high and low SES groups. Causes for this are not clear. It is well known that an unhealthy lifestyle is more common in low SES but this can only explain a part of observed SES differences.

One possible explanation is effects of psychosocial factors. High levels of psychosocial risk factors and low availability of psychosocial resources are well documented predictors of CHD and more common in low SES. We and others have demonstrated that these factors are related to poor function of the HPA axis with reduced cortisol reactivity and with higher levels of markers for inflammation and plaque vulnerability, which also are known predictors of CHD.

The overall objective of the research program is to analyse, in a prospective design, to what extent socioeconomic differences in CHD incidence and death can be explained by psychosocial factors, especially psychological resources, and if observed effects are mediated by biological markers of stress, inflammation and plaque vulnerability.

Our data builds on two cohorts, using the same design of a random sample from a normal middle-aged Swedish population. Data collection: cohort I 2003-2004 (n=1007); cohort II 2012-2015 (n=2051), used a comprehensive design with broad questionnaires on SES, psychosocial risk factors, psychological resources, lifestyle and present disease, anthropometrics, saliva and blood samples. Primary outcome is symptomatic CHD. In a nested case control design data for cases shall be compared to controls.

While CHD incidence is falling, SES differences in CHD incidence and mortality remain and causes for this are not clear. This is one of few prospective studies linking the chain from SES, via psychosocial factors to biological markers of stress, inflammation and plaque vulnerability and CHD. The study has, therefore, the potential to generate important knowledge on causes behind SES disparities in CHD and on "how stress gets under your skin"

More information about study design, study populations and timeline is available in document under the tab Documentation.

Cohort 1: Data collection is conducted in collaboration with 10 Primary Health Care centers (PHCs) in Östergötland county council and sampling was done from the normal population of the catchment area for each PHC. The study is build on a comprehensive design with broad questionnaires on SES, psychosocial risk factors, psychological resources, lifestyle and present disease, anthropometrics, saliva and blood samples.

Cohort 2: Data collection is conducted in collaboration with 27 PHCs in Östergötland and 19 PHCs in Jönköping county council. The same methods are used for collecting data, as described for cohort 1.

**Data contains personal data**

Yes

**Sensitive personal data**

Yes

**Type of personal data**

Medical data

**Code key exists**

Yes

**Unit of analysis**

[Individual](#)

**Time Method**

[Longitudinal](#)

**Sampling procedure**

[Probability](#)

Random samples from the normal population.

**Time period(s) investigated**

2003-09-30 – 2004-03-03

2012-08-21 – 2015-12-31

**Biobank is connected to the study**

Yes

**Number of individuals/objects**

1007

**Data format / data structure**

[Numeric](#)

**Data collection 1**

- Mode of collection: Measurements and tests

- Time period(s) for data collection: 2003-09-30 – 2004-03-03
- Data collector: Linköping University, Department of Medical and Health Sciences
- Number of responses: 1007
- Source of the data: Population group

## Data collection 2

- Mode of collection: Self-administered questionnaire
- Time period(s) for data collection: 2003-09-30 – 2004-03-03
- Data collector: Linköping University, Department of Medical and Health Sciences
- Number of responses: 1007
- Source of the data: Population group

## Data collection 3

- Mode of collection: Self-administered questionnaire
- Time period(s) for data collection: 2012-08-21 – 2015-12-31
- Data collector: Linköping University, Department of Medical and Health Sciences
- Number of responses: 7051
- Source of the data: Population group

## Data collection 4

- Mode of collection: Measurements and tests
- Time period(s) for data collection: 2012-08-21 – 2015-12-31
- Data collector: Linköping University, Department of Medical and Health Sciences
- Number of responses: 7051
- Source of the data: Population group

## Geographic spread

Geographic location: [Sweden](#), [Östergötland County](#), [Jönköping County](#)

## Responsible department/unit

Department of Medical and Health Sciences

## Ethics Review

Linköping - Ref. 02-324 and 2012/8031

## Research area

[Medical and health sciences](#) (Standard för svensk indelning av forskningsämnen 2011)

[Health](#) (CESSDA Topic Classification)

## Keywords

[Socioeconomic factors](#), [Inflammation](#), [Cohorts.se](#), [Stress](#), [Psychosocial factors](#), [Psychological resources](#)

## Publications

Garvin, P., Jonasson, L., Nilsson, L., Falk, M., & Kristenson, M. (2015). Plasma Matrix Metalloproteinase-9 Levels Predict First-Time Coronary Heart Disease: An 8-Year Follow-Up of a Community-Based Middle Aged Population. In PLOS ONE (Vol. 10, Issue 9, pp. e0138290-). <https://doi.org/10.1371/journal.pone.0138290>

**DOI:** <https://doi.org/10.1371/journal.pone.0138290>

**URN:** <urn:nbn:se:liu:diva-122112>

**SwePub:** <oai:DiVA.org:liu-122112>

Garvin, P., Nilsson, E., Ernerudh, J., & Kristenson, M. (2015). The joint subclinical elevation of CRP and IL-6 is associated with lower health-related quality of life in comparison with no elevation or elevation of only one of the biomarkers. In *Quality of Life Research* (Vol. 25, Issue 1, pp. 213–221).

<https://doi.org/10.1007/s11136-015-1068-6>

**URN:** <urn:nbn:se:liu:diva-124641>

**DOI:** <https://doi.org/10.1007/s11136-015-1068-6>

**SwePub:** <oai:DiVA.org:liu-124641>

Granström, F., Molarius, A., Garvin, P., Elo, S., Feldman, I., & Kristenson, M. (2015). Exploring trends in and determinants of educational inequalities in self-rated health. In *Scandinavian Journal of Public Health* (Vol. 43, Issue 7, pp. 677–686). <https://doi.org/10.1177/1403494815592271>

**URN:** <urn:nbn:se:liu:diva-122099>

**DOI:** <https://doi.org/10.1177/1403494815592271>

**SwePub:** <oai:DiVA.org:liu-122099>

Pössel, P., Mitchell, A. M., Sjögren, E., & Kristenson, M. (2015). Do Depressive Symptoms Mediate the Relationship Between Hopelessness and Diurnal Cortisol Rhythm? In *International Journal of Behavioral Medicine* (Vol. 22, Issue 2, pp. 251–257). <https://doi.org/10.1007/s12529-014-9422-6>

**DOI:** <https://doi.org/10.1007/s12529-014-9422-6>

**URN:** <urn:nbn:se:liu:diva-115573>

**SwePub:** <oai:DiVA.org:liu-115573>

## Accessibility level

Access to data through an external actor

Access to data is restricted

## Homepage

[Livsvillkor, stress och hälsa - LSH-studien](#)

## Contact for questions about the data

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## Is part of collection at SND

[Swedish Cohort Consortium \(Cohorts.se\)](#)

## Download metadata

[DataCite](#)

[DDI 2.5](#)

[DDI 3.3](#)

[DCAT-AP-SE 2.0](#)

[JSON-LD](#)

[PDF](#)

Citation (CSL)