

# CHANCES

Consortium on Health and Ageing:  
Network of Cohorts in Europe and United States

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***Conference: Learning by doing.  
Making interdisciplinary work***

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## Ageing cohorts

- Undertake multidisciplinary cohort work addressing the health of ageing populations
- Focus on developing robust health-related data at the EU level
- The research should build on and complement work to-date, to empower researchers and policy makers in various domains (healthcare, social care, pension provision) to take informed decisions.



## **The CHANCES project aims**

to combine and integrate on-going cohort studies

in order to

produce evidence on ageing-related health characteristics and determinants in Europe, **and their socio-economic implications.**

**14 cohorts**

participate in the project, covering populations from:

**18** EU Member States, **4** associate countries, **3** additional countries.

The combination of these different studies would lead to an **integrated approach** for the study of health in the elderly.

## Participating cohorts

STUDY	COUNTRY
Participating Centres from the EPIC-Elderly Cohort	Dk, Gre, NL, Spa, Swe, UK
Elderly Study	NL
ESTHER	Ger
HELGA/AGES Reykjavik activities	Dk/Ice
MORGAM	Australia, Dk, Fin, Fra, Ger, Ita, Lit, Pol, Russia, Swe, UK
Health and Disease Study	Swe
NIH-AARP	USA
Nurses' Health Study	USA
SENECA	Bel, Dk, Fra, Gre, Hun, Ita, NL, Nor, Pol, Por, Spa, Swi
Zutphen Elderly Study	NL
Betula	Swe
HAPIEE	Cz, Lit, Pol
SHARE	Aus, Bel, Cz, Fra, Ger, Gre, Ire, Isr, Ita, NL, Pol, Spa, Swi

<b>STUDY</b>	<b>PARTICIPANTS</b>	<b>FOLLOW-UP</b>
<b>EPIC-Elderly</b>	<b>100,504</b>	<b>1992-2007</b>
<b>Elderly Study</b>	<b>7,983</b>	<b>1990-2008</b>
<b>ESTHER</b>	<b>9,953</b>	<b>2000-2008</b>
<b>AGES-Reykjavik</b>	<b>5,764</b>	<b>2002-2008</b>
<b>MORGAM</b>	<b>128,874</b>	<b>1982-2004</b>
<b>Health and Disease Study</b>	<b>16,000</b>	<b>1985-2008</b>
<b>NIH-AARP</b>	<b>566,402</b>	<b>1995-2006</b>
<b>Nurses' Health Study</b>	<b>77,782</b>	<b>1984-2004</b>
<b>SENECA</b>	<b>2,586</b>	<b>1988-1999</b>
<b>Zuthpen Elderly Study</b>	<b>878</b>	<b>1960-1990</b>
<b>Betula</b>	<b>4,000</b>	<b>1988-2005</b>
<b>SHARE</b>	<b>30,000</b>	<b>2004-2007</b>
<b>TOTAL</b>	<b>1,410,000</b>	

# Rationale



- Data on health of ageing populations are essential for health, social and economic research and management
- No single database fulfils all these characteristics and establishing such a large cohort in Europe would represent a very expensive endeavour
- Alternative is the combination of existing cohorts in Europe and in North America in a consortium
- Developing an efficient and flexible infrastructure for conducting pooled or parallel analyses of chronic diseases and disabilities among the elderly, their determinants, and their economic implications



# Components of the project



- Incidence of chronic conditions, disabilities and mortality
- Prevalence of chronic conditions and disabilities
- Health-related determinants (risk factors) of chronic conditions and disabilities
- Ageing-related characteristics as determinants of chronic conditions, disabilities and mortality
- Social and economic implications of chronic conditions, disabilities and mortality in the elderly



# Health-related determinants and ageing-related characteristics



- **Health related determinants**
  - socio-economic factors (e.g., education, income)
  - environmental factors (e.g., occupational exposures)
  - lifestyle factors (e.g., tobacco smoking, alcohol drinking)
  - nutritional factors (e.g., BMI, dietary patterns)
- **Ageing-related characteristics**
  - retirement age, and extent of social networks





# Chronic conditions and disabilities

- **Non-specific conditions**
  - mortality
  - DALY
  - disability
- **Primary conditions and disabilities**
  - cancer
  - diabetes and cardiovascular diseases
  - fractures and osteoporosis
  - cognitive function and Alzheimer disease
- **Other conditions and disabilities**
  - eye diseases
  - chronic respiratory conditions



To analyse cross-sectional and time-dependent associations of age-related diseases and conditions with predictors such as:

- **socio-economic factors, like education, income, occupation, and demographics**
- **nutrition**
- **other lifestyle or health behaviours (smoking, alcohol, physical activity)**

# A resource for future use



Disability-adjusted life years (DALYs),  
since it reflects both the length of life lost to  
premature death as well as the time spent  
in unhealthy states.



# DALYs in the CHANCES project



## Calculation of DALYs because of:

- cardiovascular disease
- cancer
- type 2 diabetes
- depression
- cognitive decline
- hip fractures



## Based on the previous calculated DALYs

*Calculation of population attributable fractions, by gender, for major disease determinants, such as :*

- smoking
- high blood pressure
- high LDL-cholesterol
- body mass index
- physical inactivity
- alcohol and fruit/vegetable intake

## Example: one of the CHANCES objectives

### **Outcome of interest: Osteoporotic fractures**

#### **Estimation of measures of disease frequency:**

a) Incidence, b) Prevalence, c) Mortality

#### **Examination of major groups of health determinants (potential risk factors)**

- *Socio-economic factors*
- *Environmental factors*
- *Life-style factors*
- *Nutritional factors*

#### **Estimation of disability and prognosis:**

a) DALYs, b) adjusted survival

While there has been ample demonstration  
of a social gradient in health,  
much less research has been dedicated to  
explanation of how it comes to be,  
and hence  
what could be done about it.

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# Partners







Thank you for your attention