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HES data uses in Finland

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Health Examination Surveys in Finland – two traditions

1. The Mobile Clinic Survey in 1966-1972, The Mini-Finland Survey 1978-1980, The Health 2000 and Health 2011 surveys

   – Background: The social security system reform

   – Focus: major public health problems (also dental and mental health) and functional capacity, their determinants, need for care and health service utilization

2. The FINRISK surveys since 1972

   – Background: The North Karelia project

   – Focus: major cardiovascular disease risk factors

3. New survey FinHealth 2017

   – Merging the two traditions

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Other data sources

- Targeted specific HESs: migrants, Romani population
  - Comparison to the general population

- Several Health Interview Surveys – some also merged lately
  - Major focus on regional data

- Comprehensive register data (e.g. social security benefits, hospital discharge register, cancer register, primary care register, birth register)
  - Possibility to link register data with survey data (personal ID codes) to
    - evaluate non-response, correct non-response bias
    - supplement survey data
    - follow-up for epidemiological studies (medication with specific ATC codes, hospital use or sickness leave with specific diagnosis)

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Use of data: Who?

- By the survey organizers/study teams
  - Basic reporting
  - Scientific research as well as policy & health care evaluation purposes
    - Collaboration with universities and other research institutes and other stakeholders (e.g. ministries)
- By the research community
  - A scientific board evaluates study proposals
  - THL Biobank (since 2014)

Use of results: Who?

- Policy makers, e.g. ministries, politicians
- Non governmental organizations
- Professionals
- Researchers
- Industry: developing new products
- Students
- Media – to the general public
- Participants

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Examples of health indicator information only available from HESs

- Biological risk factors (EHES core)

- Disease prevalence (e.g. hypertension, diabetes, bronchial obstruction, DSM-IV major depressive disorder, gingivitis)

- Functional capacity (e.g. visual impairment, hearing loss, cognitive capacity/verbal fluency, walking speed, hand grip strength)

- Prevalence, trends and predictions

EVIDENCE-BASED PUBLIC HEALTH POLICY: EXAMPLES

Examples of national public health programmes

- The National Obesity Programme 2012–2018 "Wellbeing from healthy nutrition and physical activity"

- National Memory Programme 2012–2020. Creating a "memory-friendly" Finland

- National type 2 diabetes prevention programme: FIN-D2D 2003-2007

- Allergy Programme 2008-2018

- National HESs provide epidemiological background as well as a tool for evaluating the programmes

Example: Vitamin D deficiency in the Finnish population

- Vitamin D-levels in the population measured in the Finrisk study

  - In 1990's low levels were observed in population

- Fortification of dairy products (milk and margarines) with vitamin D since 2002 by regulation

- Updated recommendations for use of vitamin D supplements

- Monitoring through national HESs

  - Reported vitamin D intake + measured levels

- Low levels for migrants: intervention study

Example: Exposure to second hand smoke

- Exposure for second hand smoke (passive smoking) estimated by cotinine measurements

- Legislation to prevent smoking in work and public places

- Monitoring through national HESs
  - Differences in population groups (age, sex, education, SES)

PUBLIC HEALTH PRACTICE: EXAMPLES

Clinical guidelines in Finland Current Care Guidelines

- independent, evidence-based clinical practice guidelines.

- covering important issues related to health, medical treatment as well as prevention of diseases. Examples:

  - Obesity

  - Dyslipidaemias

  - Hypertension

  - Tobacco dependence and cessation

  - COPD

  - Diabetes

  - Memory disorders

- HESs provide data about determinants and prevalence, also data for evaluation of care (are the care targets met/guidelines followed?)

- http://www.kaypahoito.fi/web/english/about-current-care-guidelines
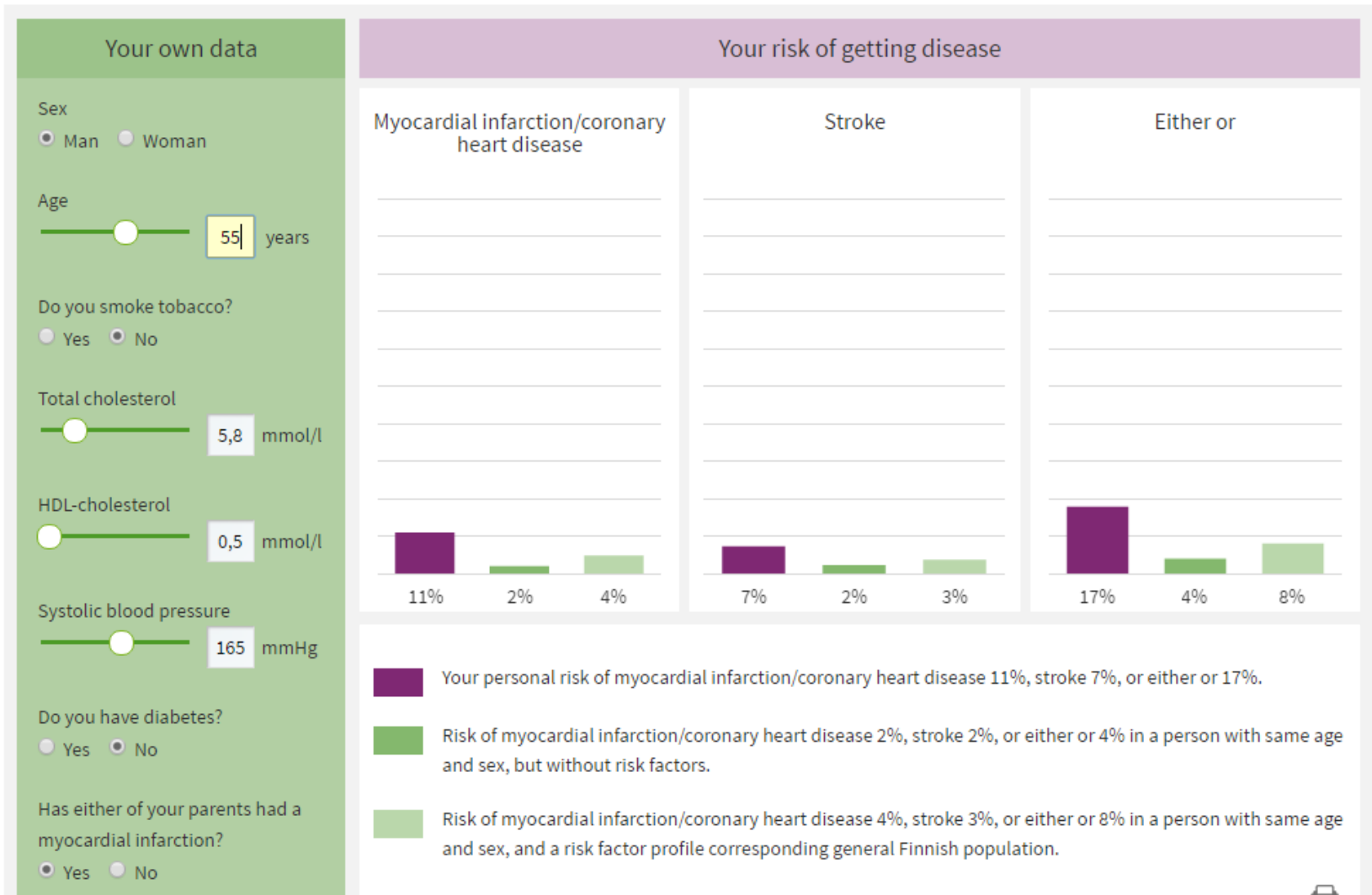
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Finnish risk calculators

- The HES data together with mortality and morbidity follow-up data through record linkage has been used to develop several risk calculators

  - FINRISK calculator for CVD risk (https://www.thl.fi/en/web/chronic-diseases/cardiovascular-diseases/finrisk-calculator)

  - FINDRISC Diabetes risk calculator

    - E.g. The StopDia project develops and tests approaches to empower individuals to adopt and maintain healthy lifestyle to reduce the risk of type 2 diabetes.

  - The CAIDE risk score: dementia risk

- Widely used by medical personnel in primary health care

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Finrisk calculator

Your own data

Sex
- ◉ Man   ○ Woman

Age
55 years

Do you smoke tobacco?
- ○ Yes   ◉ No

Total cholesterol
5,8 mmol/l

HDL-cholesterol
0,5 mmol/l

Systolic blood pressure
165 mmHg

Do you have diabetes?
- ○ Yes   ◉ No

Has either of your parents had a myocardial infarction?
- ◉ Yes   ○ No

Your risk of getting disease

Myocardial infarction/coronary heart disease	Stroke	Either or
11% 2% 4%	7% 2% 3%	17% 4% 8%

Your personal risk of myocardial infarction/coronary heart disease 11%, stroke 7%, or either or 17%.

Risk of myocardial infarction/coronary heart disease 2%, stroke 2%, or either or 4% in a person with same age and sex, but without risk factors.

Risk of myocardial infarction/coronary heart disease 4%, stroke 3%, or either or 8% in a person with same age and sex, and a risk factor profile corresponding general Finnish population.

RESEARCH POSSIBILITIES: EXAMPLES

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Internationally relevant new knowledge

- Prevention studies: eg.
  - The FINGER study showed, for the first time, that memory disorders can be prevented by controlling the associated risk factors.
  - The Finnish Diabetes Prevention Study (DPS)
- Genetic research
  - DNA used for numerous genome-wide association studies
  - E.g. genetic tests for lactose intolerance and familial hypercholesterolemia
- General population reference group from the national HES for clinical studies
- Research groups around the world use our HES data
  - Health 2000/2011 and FINRISK data: about 150 scientific publications/year

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Conclusions

- HESs have provided information which couldn't be obtained from other sources.

- The data and information is needed for

  A) evaluating and developing health policy, health services and multi-sectoral actions for health promotion

  B) scientific studies producing information needed for promoting health, functional capacity and wellbeing

  – Evidence base

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