



# European Health Examination Surveys, a tool for collecting objective information about health

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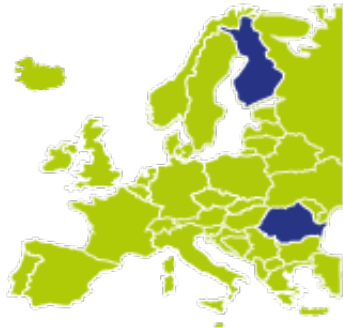
National Institute for Health and Welfare, Helsinki, Finland



# Health examination survey



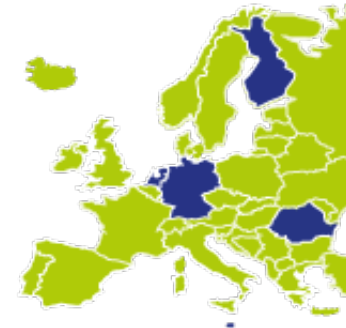
# History of national HESs in Europe



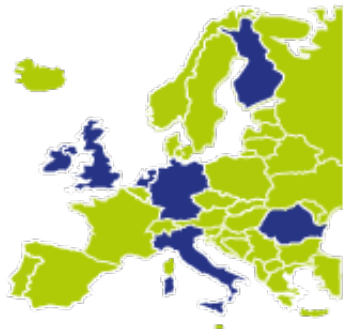
1950's-1960's



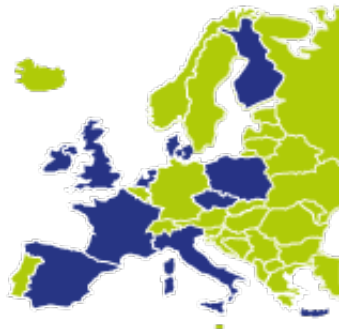
1970's



1980's



1990's



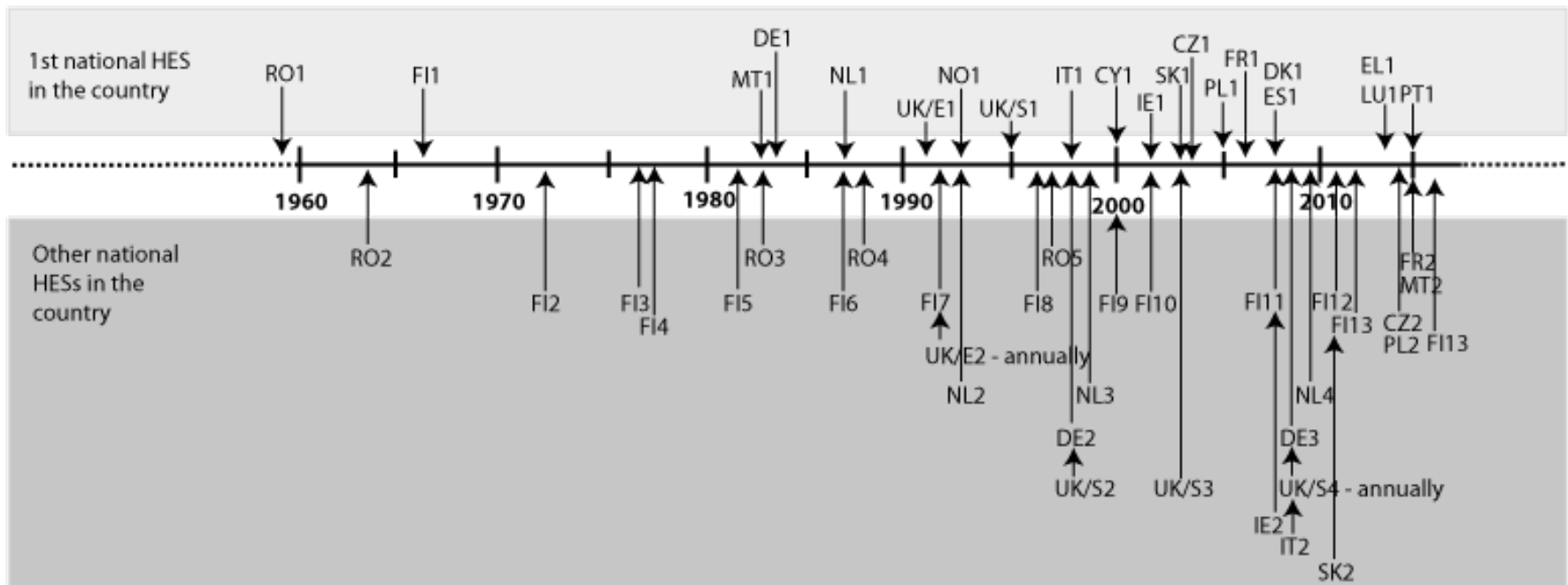
2000's



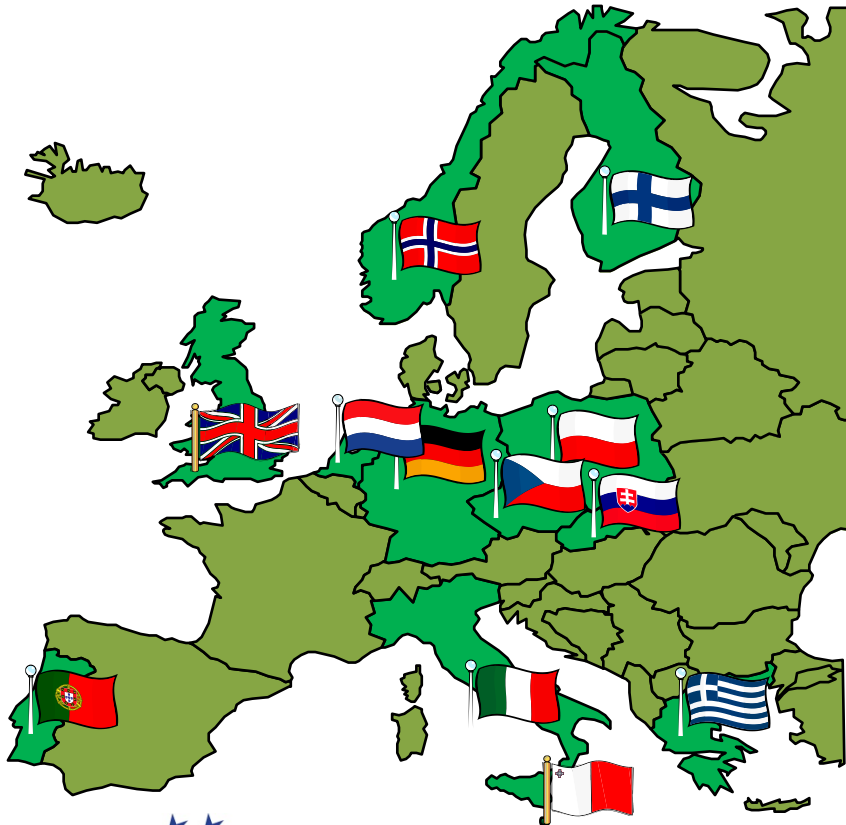
2010's



# Repeated national HESs



# EHES Pilot Project



- 2009-2012 Establishment of the EHES Coordinating Centre and EU level coordination activities
- Preparation of the EHES Manuals
- 2010-2011 Pilot surveys
- <http://www.ehes.info>

# Type of data collected in previous national HESs - questionnaires

- Sosio-demographic background information
- Health status and diagnosed diseases
- Family history of diseases
- Use of health services
- Use of medications
- Health behaviour such as smoking, alcohol use, diet and nutrition, physical activity
- Functional capacity
- Quality of life
- Mental health
- Self-reported height and weight





# Type of data collected in previous national HESs - physical measurements

Most common:

- Anthropometrics
- Blood pressure
- Lung function test
- Cognitive functioning
- Physical activity/fitness
- Ultrasound test as as heel bone density and thyroid gland

In some HESs:

- Vision and hearing tests
- Dental examination
- ECG

# Type of data collected in previous national HESs - collection of biological samples and their analysis

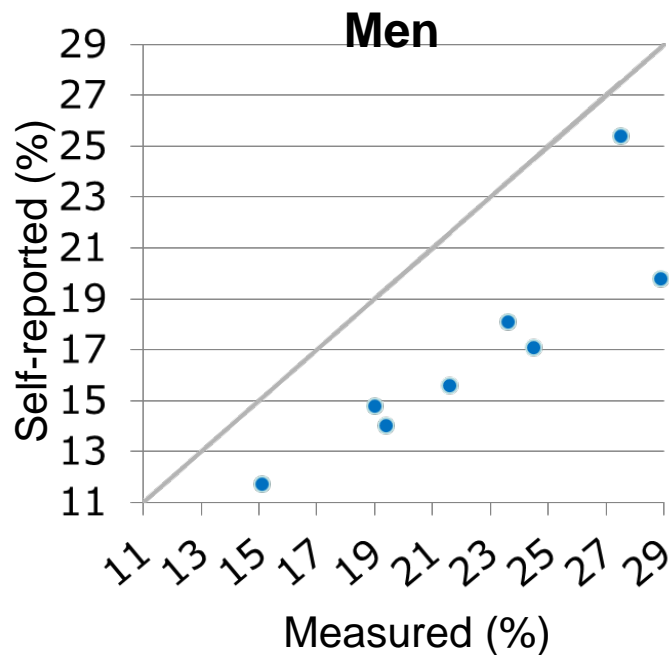
- Venous blood samples
  - Lipids (total, HDL, LDL, triglycerides)
  - Blood sugar (glucose, HbA1c)
  - Haemoglobin
  - Calcium, Sodium, Magnesium
  - High Sensitive C-Reactive Protein
  - Ferritin
  - Vitamin D, Vitamin B12
  - Also in some HESs: Total immunoglobulin E, Apolipoprotein A1 and B, Alanine Aminotransferase, etc.
- Urine (spot)
  - Sodium, Potassium
  - Creatinine, Micro albumin
  - Hepatitis E, Salmonella, Chlamydia
  - Also in some HESs: Mercury, Cadmium, Pesticides, Arsenic
- Also some HESs have collected hair, saliva and cell lines



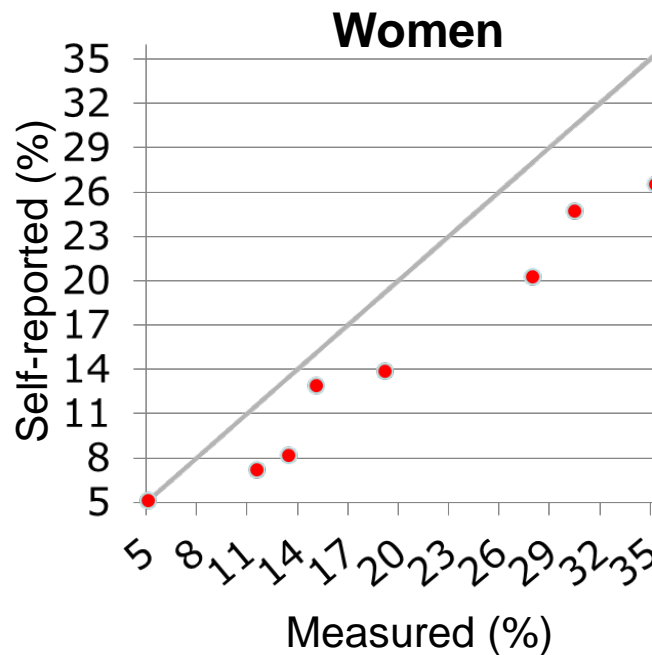




# Obesity



Average difference = 4.4 %-points  
 % at risk missed by self-reported: 30%

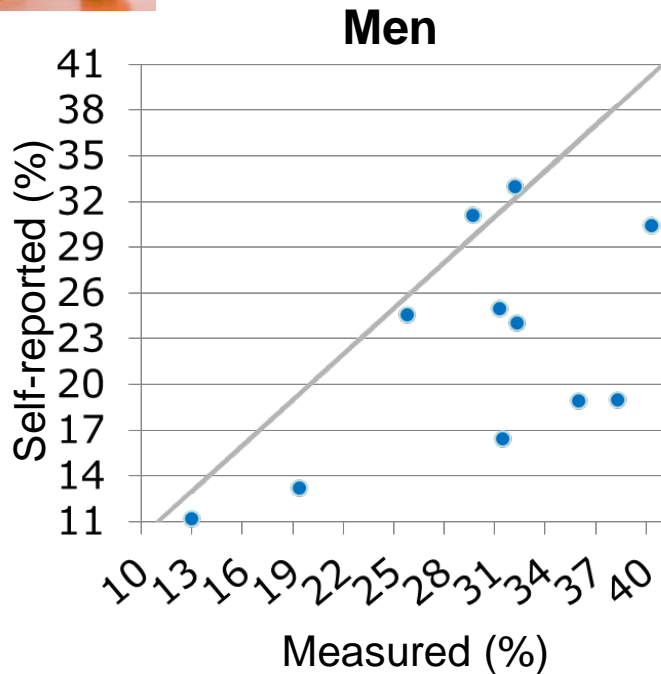


Average difference = 4.2 %-points  
 % at risk missed by self-reported: 26%

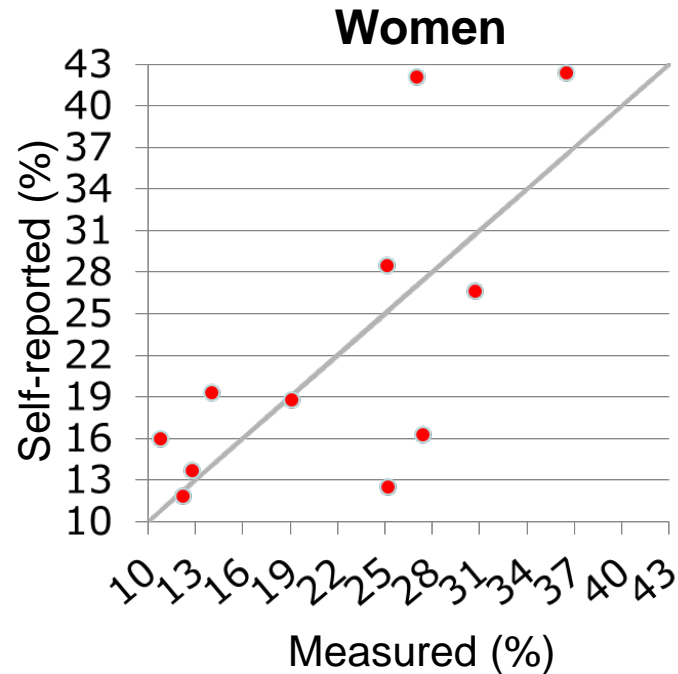




# Hypertension



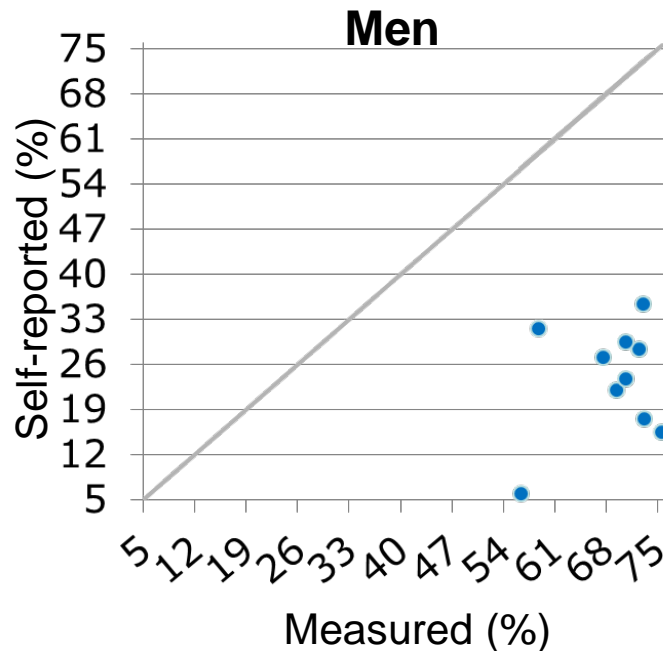
Average difference = 10.1 %-points  
 % at risk missed by self-reported: 41%



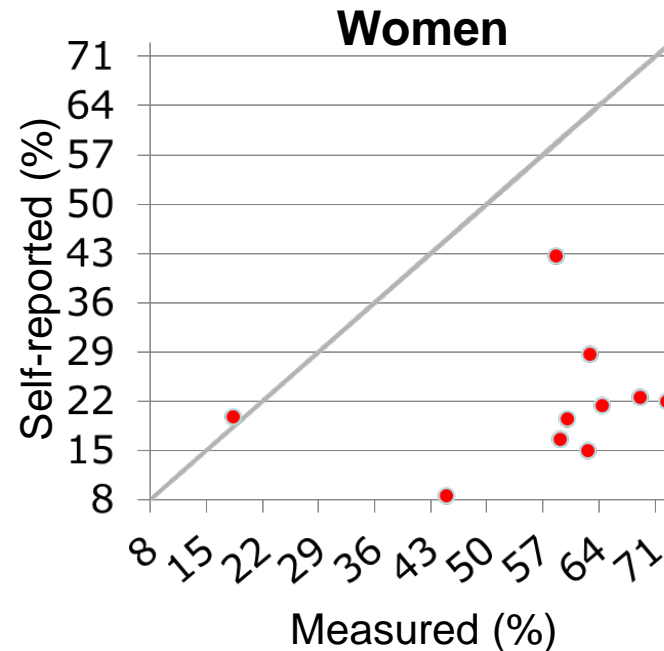
Average difference = -3.5 %-points  
 % at risk missed by self-reported: 28%



# Elevated total cholesterol



Average difference = 49.6 %-points  
 % at risk missed by self-reported: 68%

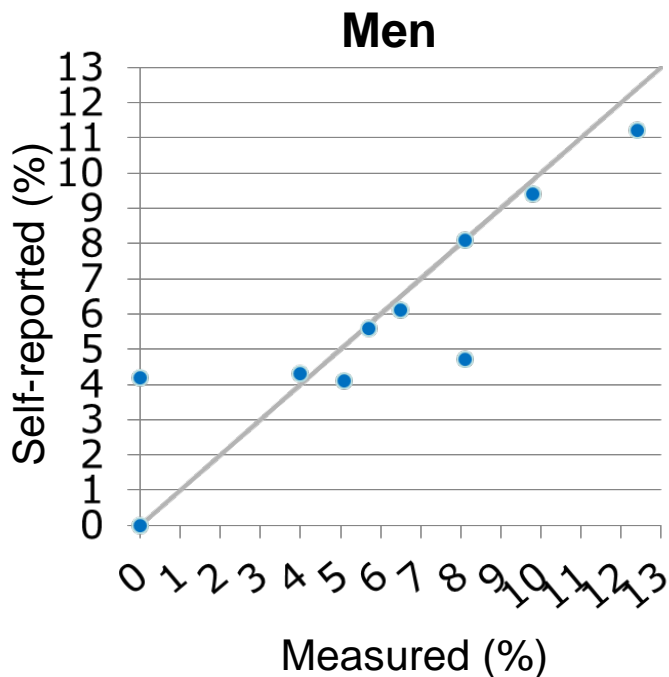


Average difference = 43.6 %-points  
 % at risk missed by self-reported: 70%

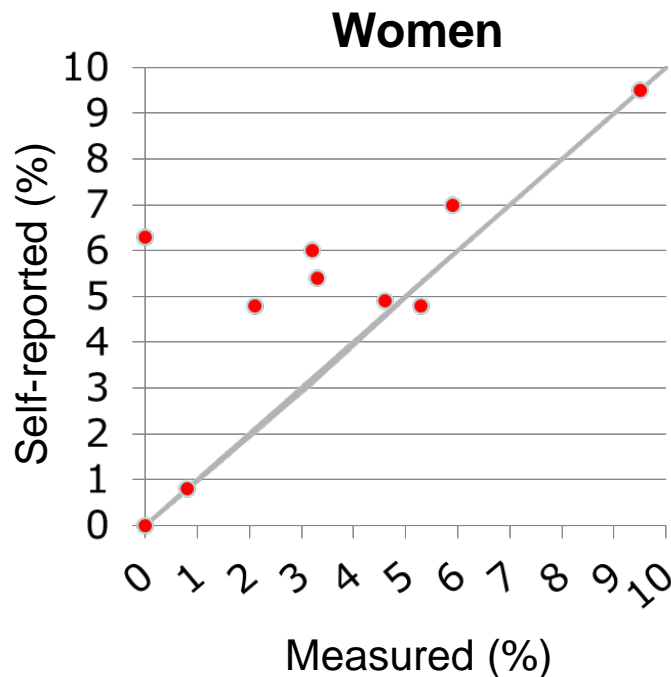




# Diabetes



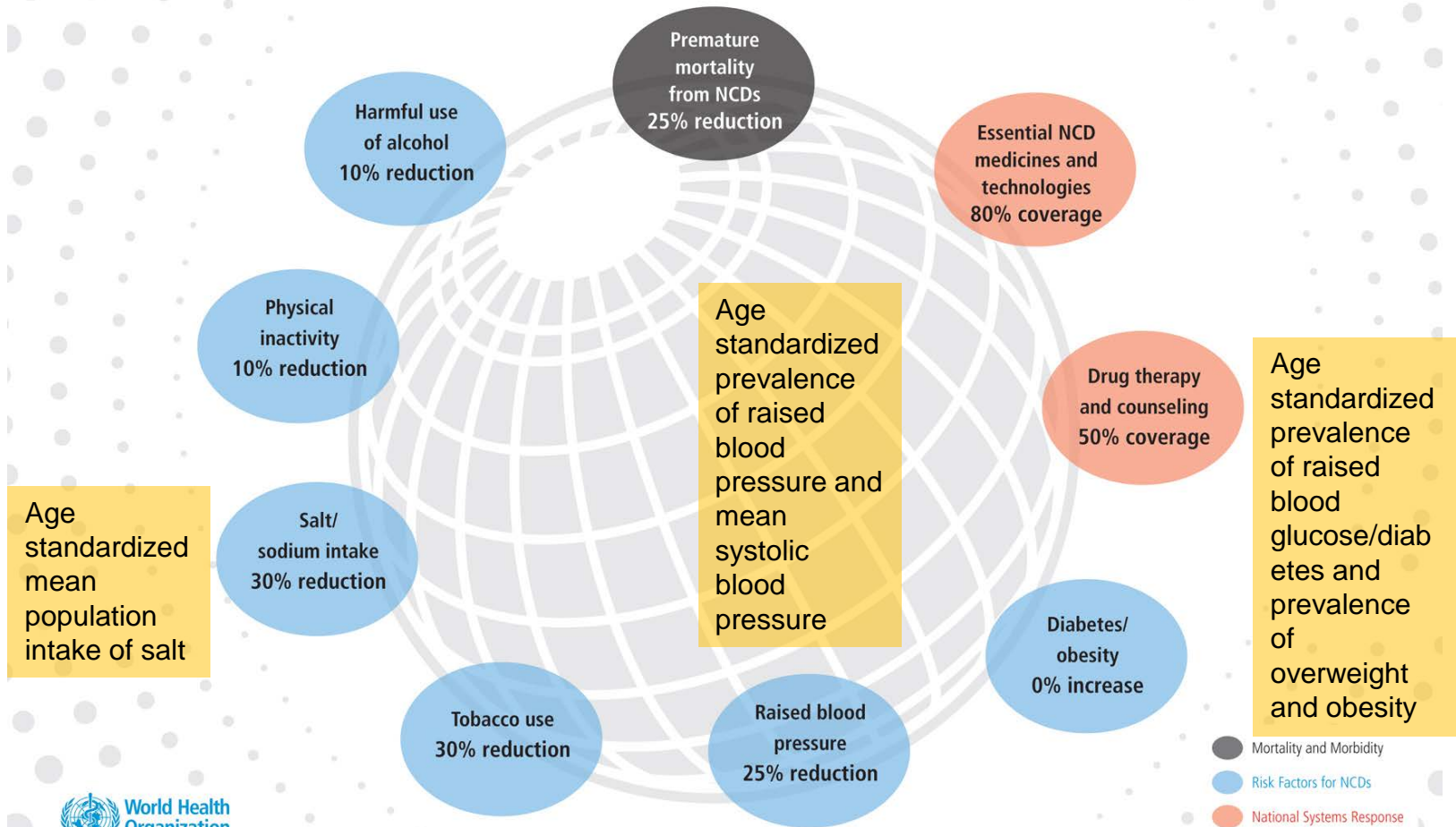
Average difference = 0.8 %-points  
 % at risk missed by self-reported: 22%



Average difference = -0.9 %-points  
 % at risk missed by self-reported: 14%



# Set of 9 voluntary global NCD targets for 2025



# Conclusions

- A national HES can provide objective information about health and determinants of health
    - Without recall bias
    - Without awareness bias
  - Allows for example evaluation of
    - Hypertension level in the population and population sub-groups
    - % of hypertensives under medical treatment
    - % of treated hypertensives who's blood pressure levels are within recommended limits
- => Relevant information for health policy decisions and assessment of health system performance

