

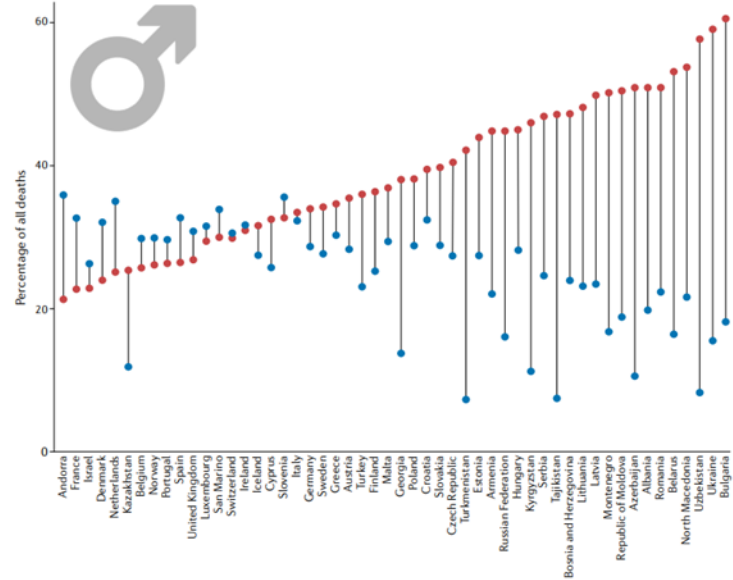
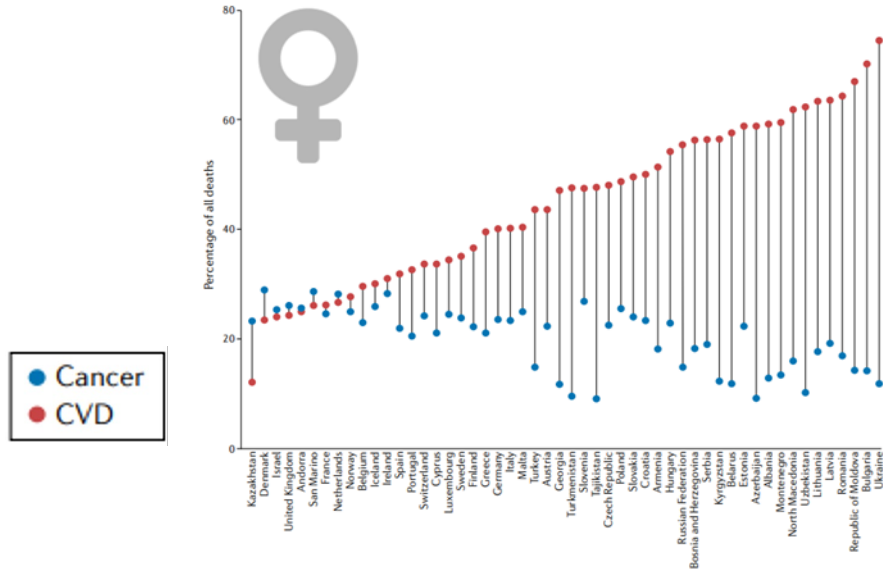
# What do the ESC Atlas and registry data say?

Prevention regains the forefront of the CVD agenda

Nicolle Kränkel

ESC Spring Summit, 7<sup>th</sup> March 2024

# Cardiovascular Mortality Rates in Europe



Townsend N et al. Nat Rev Cardiol. 2022; doi: 10.1038/s41569-021-00607-3

➤ Cardiovascular diseases surpass cancer(s) as cause of death in most European countries, contrary to public perception.

**We need reliable data  
to inform the public and  
to inform effective and efficient healthcare strategies.**

# Where do we get these data?

- epidemiological surveys
- national registries
- electronic clinical records
- claims-based databases / administrative data

# What is the ESC Atlas of Cardiology?



- Database containing cardiovascular data from the ESC's 57 member countries
- more than 300 variables pertaining to CVD risk factors, morbidity, mortality and CVD management
  - socio-demographics features
  - demand-side risk factors, and CVD epidemiology burden (mortality and morbidity)
  - supply of cardiac services, such as human and capital resources, services provided, and selected procedures performed

<https://eatlas.escardio.org/Atlas/ESC-Atlas-of-Cardiology>

# Where do we get ATLAS data?

## CVD HEALTHCARE DELIVERY

Data collected by the ESC solely or in collaboration with subspecialty associations. Includes country-level data on a number of cardiology-related specialists, infrastructure, access to cardiovascular health care. approx. 75 variables



## CVD MORBIDITY

Contains standardized country-level point estimates of prevalence and incidence of CVD since 1990, produced by the Global Burden of Disease Study, IHME, Washington. Updated (including retrospectively) biannually. Estimates can notably vary from release to release. approx. 75 variables



## RISK FACTORS

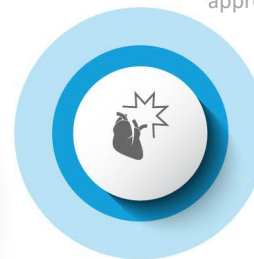
Data on environmental, clinical and lifestyle factors of risk of CVD per country from a variety of sources.

32 variables



## CVD MORTALITY

Processed age-standardized country-level mortality data, based on raw data from WHO Mortality Database where countries report absolute number of medically certified deaths from national authorities. Raw data updated approx. once a year. 6 variables; 18 non-CVD variables on a country page.



## SOCIODEMOGRAPHIC INDICATORS

Data on aging, population size, urbanization, socioeconomic status on a country-level mainly from World Bank, mainly from WDI data set which is updated yearly.

17 variables



## HEALTHCARE ECONOMICS

Data on country-level health care expenditure



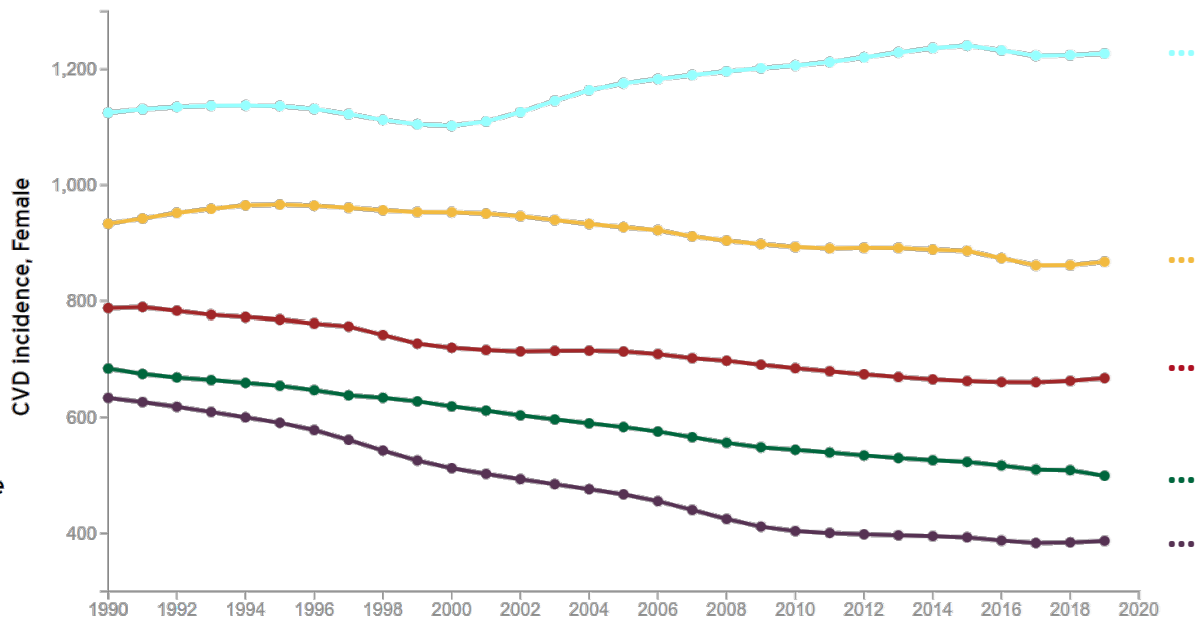
**DATA**  
structure

# CVD Incidence

Number of new cases of CVD per 100,000 population, age-standardized



- ESC
- High Income
- Middle Income
- Egypt
- Portugal

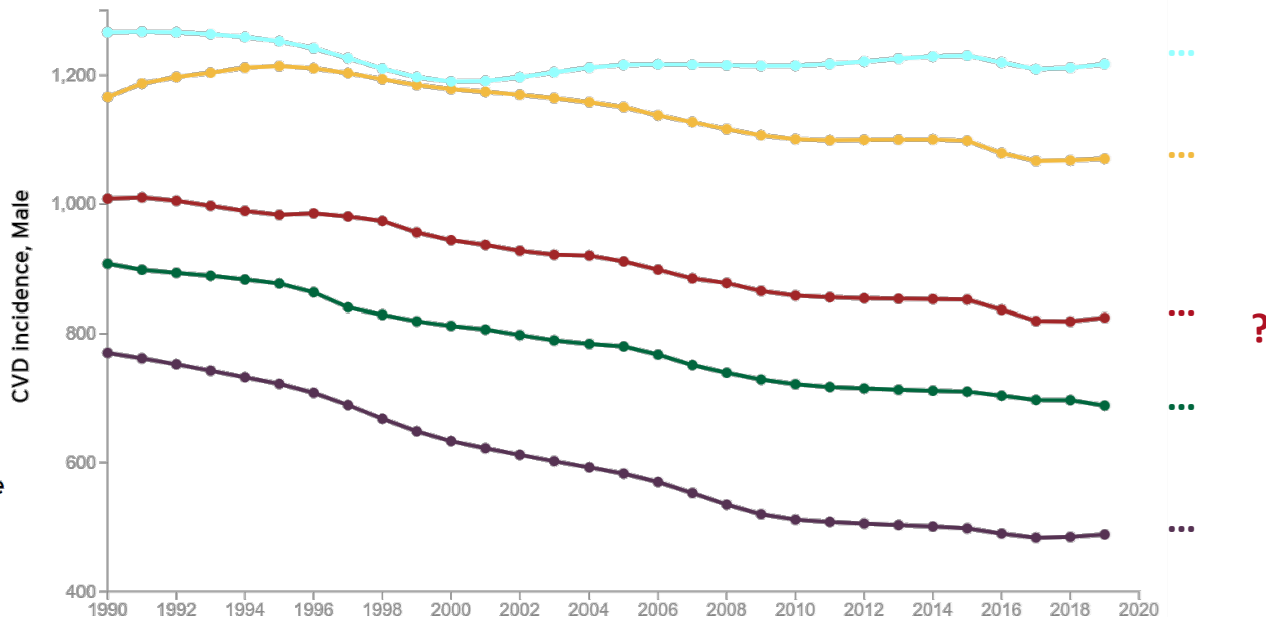


# CVD Incidence

Number of new cases of CVD per 100,000 population, age-standardized



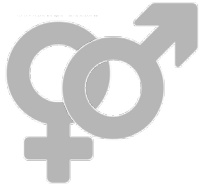
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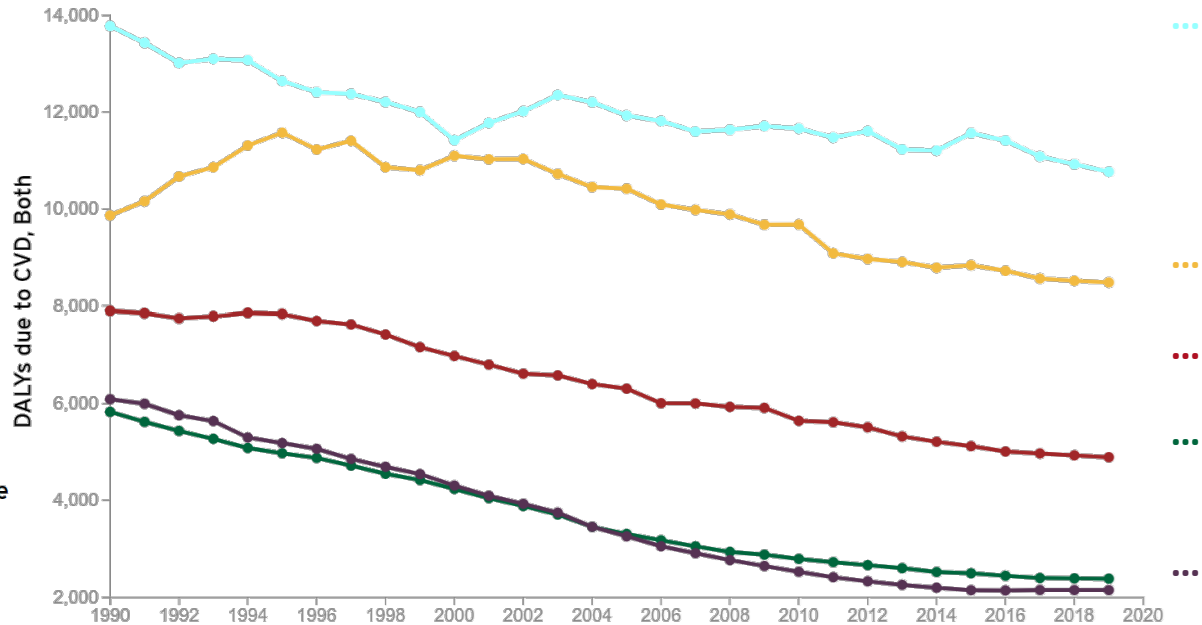


# Disability-adjusted life years (DALY) due to CVD

per 100,000 population, age-standardized

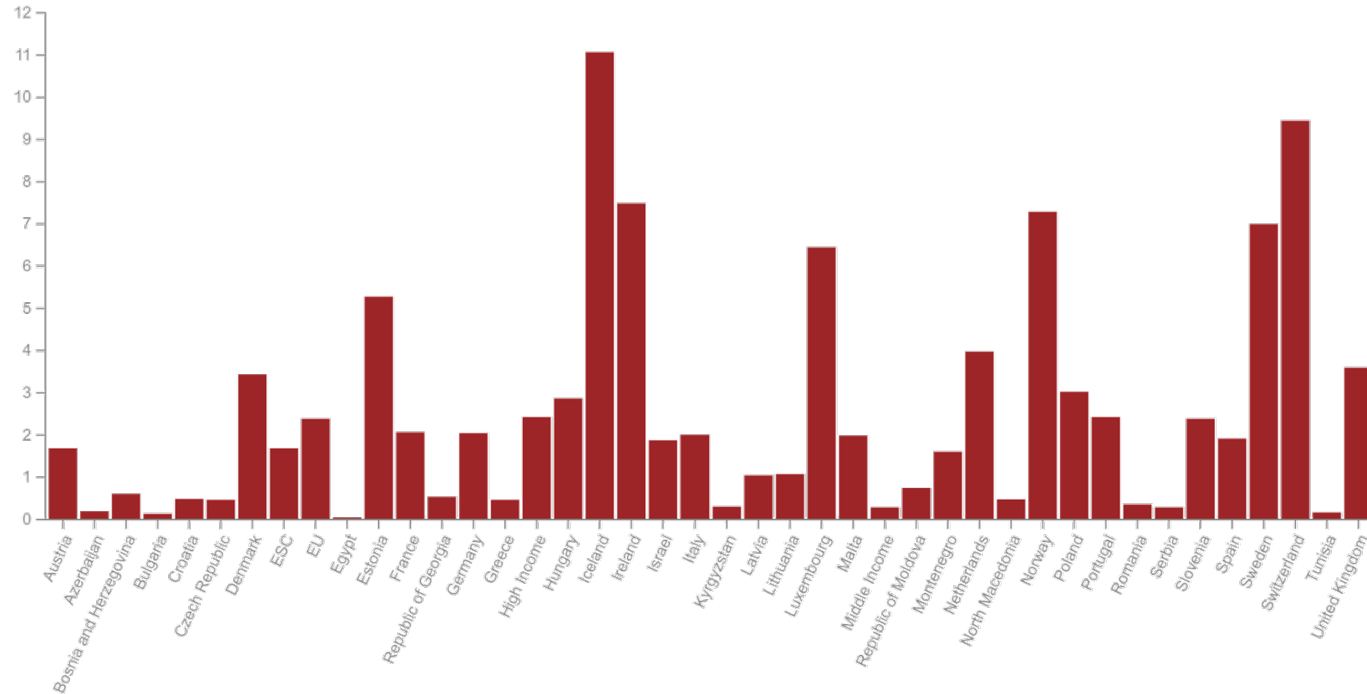


- ESC
- High Income
- Middle Income
- Egypt
- Portugal



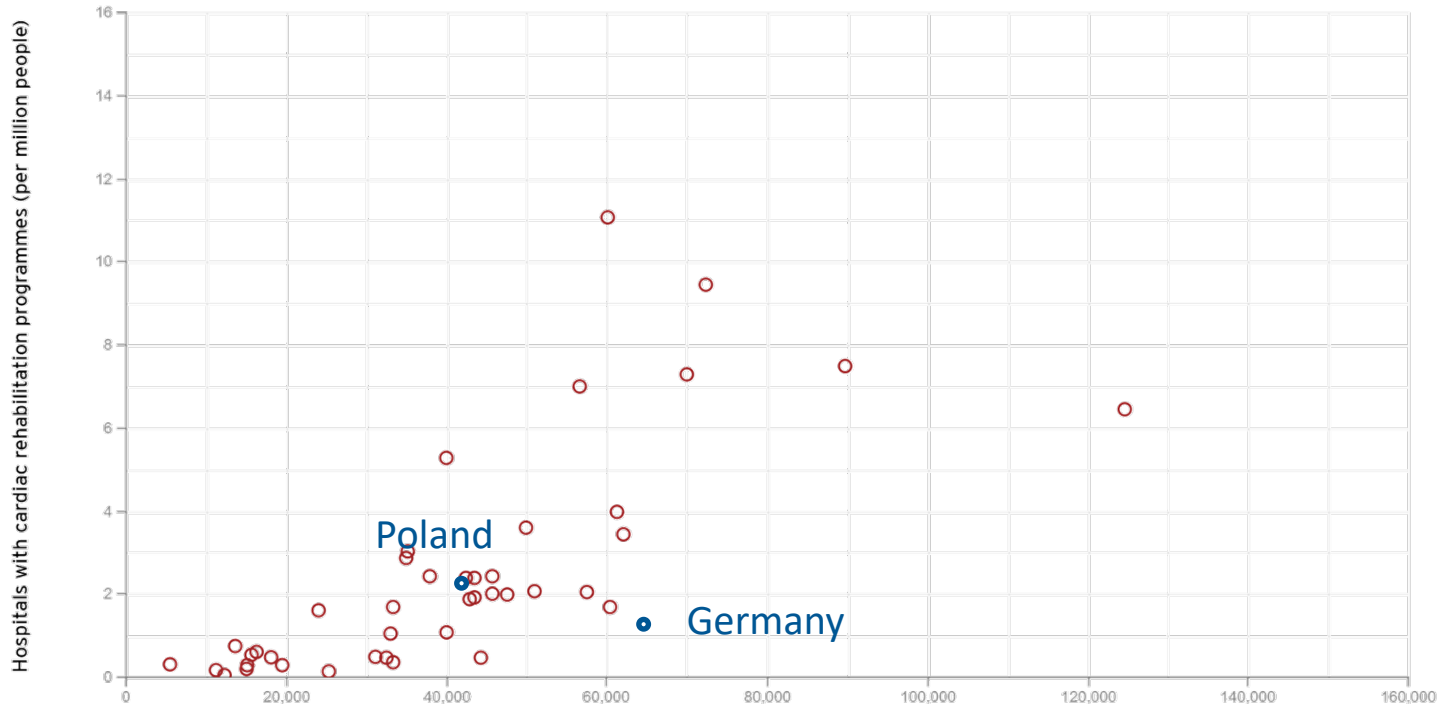
# Healthcare delivery: Hospitals with cardiac rehabilitation programmes

*per 1 million people | Year reported: 2021 or older (latest year available)*



# Healthcare delivery: Hospitals with cardiac rehabilitation programmes

*per 1 million people | Year reported: 2021 or older (latest year available)*



# Limitations

- Availability of data: fragmented, often incomplete and several years old
- Quality of modelled data is only as good as the data they are based on.

# Global Registries And Surveys Programme (GRASP)



## *main objectives*

- To evaluate the **implementation of ESC Clinical Practice Guidelines**, aiming to close the gap between guideline standards and clinical practice, and to identify gaps in adherence to guidelines to determine needs for future education.
- To assess the epidemiology and management of rare and complex cardiovascular conditions.
- To evaluate **structured approaches to prevent** cardiovascular diseases, thereby directly contributing to the ESC mission to reduce the burden of cardiovascular diseases.

# The EUROASPIRE programme

- started in 1994 to document the status of secondary prevention practice in the context of the guidelines
- expanded to include both secondary and primary prevention (EUROASPIRE III), 22 countries
- later, different focus areas, including diabetes & cardiometabolic (EUROASPIRE IV & V), 24/27 countries, within EORP
- ongoing: EUROASPIRE VI (2023-2025), hospital patients with CHD, with and without diabetes mellitus, and apparently healthy individuals in primary care at high risk (hypertension, dyslipidaemia, diabetes) of developing cardiovascular disease (CVD), within GRASP

## study task force:

**chairs:** John William McEvoy, David Wood

**members:** Dirk De Bacquer, Kosh Ray, Catriona Sian Jennings, Kornelia Kotseva, Lars Rydén, Per - Henrik Groop, Linda Mellbin, Agnieszka Adamska.

# main outcomes of EUROASPIRE so far:

- **Suboptimal Risk Factor Control:** many patients with coronary heart disease or at high risk for cardiovascular events have suboptimal control of risk factors such as hypertension, hypercholesterolemia, diabetes, and obesity.
  - gaps in the management and control of these modifiable risk factors
- **Low Rates of Lifestyle Modification:** low adherence to lifestyle recommendations such as healthy diet, regular exercise, and smoking cessation among patients at risk for cardiovascular events.
  - need for better lifestyle interventions and communication/patient education
- **Underutilization of Guideline-Recommended Therapies:** Despite the availability of evidence-based guidelines for the management of cardiovascular risk factors, guideline-recommended therapies such as statins, antiplatelet agents, and antihypertensive medications are underutilized.
- **Regional Disparities:** notable regional disparities in the management of cardiovascular risk factors and the implementation of preventive measures across participating countries.
  - importance of addressing healthcare system differences and improving access to preventive care
- **Importance of Multifactorial Risk Factor Management**
  - importance of adopting a multifactorial approach to cardiovascular risk factor management

## Do we practice what we preach? Implementation of cardiovascular prevention strategies in 13 European countries between 2011 and 2021: a statement of the European Association of Preventive Cardiology of the ESC

Nicole Kränkel<sup>1,2,3</sup>, Martijn Scherrenberg<sup>4</sup>, Mark Abela<sup>5,6</sup>, Elad Shemesh<sup>7</sup>, Oksana Kopylova<sup>8</sup>, Abraham Samuel Babu<sup>9</sup>, Marwa Hemat Gaber<sup>10</sup>, Daniel Šliž<sup>11,12</sup>, and Annett Salzwedel<sup>13\*</sup> on behalf of the European Association of Preventive Cardiology (EAPC)

<sup>1</sup>Deutsches Herzzentrum der Charité, Klinik für Kardiologie, Angiologie und Intensivmedizin, Campus Benjamin-Franklin (CBF), 12203 Berlin, Germany; <sup>2</sup>DZHK (German Centre for Cardiovascular Research) Partner Site Berlin, 13347 Berlin, Germany; <sup>3</sup>Friedrich-Springer—Centre of Cardiovascular Prevention @ Charité, Charité University Medicine Berlin, 12203 Berlin, Germany; <sup>4</sup>Faculty of Medicine and Life Sciences, University of Health, Agoralein, 3590 Drogenbos, Belgium; <sup>5</sup>Department of Cardiac Rehabilitation, Mater Dei Hospital, Msida MSD2090, Msida; <sup>6</sup>Department of Cardiology, University of Malta, Msida MSD2080, Msida; <sup>7</sup>Institute of Endocrinology, Diabetes, Metabolism and Hypertension, Tel Aviv Sourasky Medical Center, 6423906 Tel Aviv, Israel; <sup>8</sup>National Medical Research Center for Therapy and Preventive Medicine, Russian Ministry of Health, 101000 Moscow, Russia; <sup>9</sup>Department of Physiotherapy, Manipal College of Health Professions, Manipal Academy of Higher Education, Manipal, 576104 Karnataka, India; <sup>10</sup>Medical Research Institute, Alexandria University, 21561 Alexandria, Egypt; <sup>11</sup>3rd Department of Internal Diseases and Cardiology, Medical University of Warsaw, 04-789 Warsaw, Poland; <sup>12</sup>School of Public Health, Centre of Postgraduate Medical Education, 01-828 Warszawa, Poland

- **Robust and timely data** on cardiovascular risk factors and health behaviours, the basis of informed decision-making, **are needed**. Existing data are fragmentary or outdated, and excellent programmes have been discontinued.
- **Comprehensive national plans** will be required to effectively address the major risk factors of obesity and sedentary behaviour. These involve activation of inter-sectoral cooperation — in contrast to single measures — and **regular checks and adaptations** based on data that are collected in a rigorous way.

**Table 1** Changes in prevalence of individual cardiovascular risk factors between the 2011 report and follow-up data (2015–20)

	Blood pressure	Total cholesterol	Obesity	Diabetes	Smoking	Sedentary behaviour	Alcohol
Estonia	n/a	n/a	↗	n/a	↘ (M) = (F)	n/a	n/a
France	↘	n/a	= (M) ↘ (F)	n/a	↘	n/a	n/a
Germany	↘	n/a	↘ (M) ↘ (F)	n/a	↘ (M) ↘ (F)	n/a	n/a
Ireland	↘	n/a	↘	↗ (M) ↘ (F)	↘	↘ (M) ↘ (F)	n/a
Italy	↘	n/a	↘	↘	↗ (M) = (F)	↗ (M) ↘ (F)	n/a
The Netherlands	↘	↘ (M) ↘ (F)	↘ (M) ↘ (F)	n/a	↘	n/a	n/a
Norway	n/a	n/a	↘	n/a	↘	n/a	=
Poland	↘	n/a	↘	n/a	↘	n/a	n/a
Romania	↘ (M) ↘ (F)	n/a	↘	n/a*	n/a*	n/a	n/a
Russian Federation	↘ (M) ↘ (F)	↘ (M) ↘ (F)	↘	n/a*	↘ (M) = (F)	n/a	n/a
Spain	↘	n/a	↘	↘ (M) ↘ (F)	↘ (M) ↘ (F)	n/a	n/a
Sweden	↘ (M) ↘ (F)	n/a	↘	n/a	↗ (M) = (F)	n/a	n/a
United Kingdom	↘	↘	↘	= (M) ↘ (F)	↘	n/a	n/a

M, male; F, female; n/a, not applicable (no comparable data sources available for both baseline and follow-up data); =, differences <1%. Arrows in brackets—differences 1–3%; points, data source identified and listed in the appended country summaries. \*No specific data available for both time points. Comparability of pre/post-data sources presented in cells shaded in orange—weak; yellow—not clear; green—high.

Grey & red fields:  
 No data or insufficient data quality



# To Take home

(... or into the breakout sessions)

- continued high prevalence of CVD and risk factors, bad lifestyle habits, pollution
- underwhelming adherence to guidelines
- regional disparities
- fragmentary, discontinuous data

## .... **but also:**

- There are excellent initiatives (implementation & data) – support them!
- Check out the data:  
<https://eatlas.escardio.org/Atlas/ESC-Atlas-of-Cardiology>

**Thank you!**

All volunteers in all contributing countries  
and cooperating studies  
& ESC team  
contributing data & expertise  
and maintaining these programmes!