# Webinar
## A national or sub-national analysis of diabetes mellitus prevalence and health inequalities in Europe
29 February from 16:00 – 17:00 CET

### Orsolya Varga: Introduction to Health Inequalities in Europe

Research into health inequalities in Europe has developed over time, gaining importance in the mid-20th century with the emergence of studies investigating the social determinants of health. Early efforts focused on understanding the relationship between socioeconomic factors and health outcomes, laying the foundation for subsequent research. During the 1960s and 1970s, the Whitehall studies in the United Kingdom revealed a clear gradient in health status across different occupational classes. In the following decades, the European Union played a pivotal role in promoting cross-national research on health inequalities, fostering collaboration among member states. The research has broadened to encompass a wider range of determinants, including education, employment, and environmental factors. Furthermore, significant methodological improvements have been observed.

### Nour Mahrouseh:  Measuring health inequalities

Health inequality, as defined by the World Health Organization (WHO), refers to observable health differences between subgroups within a population which is crucial for obtaining quantitative insights into existing disparities. These measures aid in assessing the population's health, going beyond simple indicators like prevalence. Two fundamental approaches for measuring health inequality are absolute and relative inequality. Absolute inequality provides a magnitude of difference between subgroups, the simplest calculated by subtracting the value for one group from another. Relative inequality, on the other hand, reveals proportional differences and is simply calculated by dividing the value for one group by another. Inequality measures such as Concentration Index (CI), Gini Coefficient, Slope Index of Inequality (SII), and Relative Index of Inequality (RII) are commonly used. These measures provide a quantitative foundation for understanding and addressing health disparities, guiding targeted interventions for equitable health outcomes.

### Carlos Alexandre Soares Andrade: Goals and results of our recent work

The aim of our work is to estimate the prevalence of diabetes mellitus (DM) among individuals aged 50 years and over for the years 2010/11, 2013, 2015 and 2019 at the national level in 13 European countries and to perform a subnational analysis based on different NUTS levels. We also aimed to investigate how the inequalities in prevalence of DM are related to education, income, and urbanization.

The prevalence of DM increased from 12.1% in wave 4 to 14.1% in wave 8, with the lowest recorded in Switzerland at 6.4% in wave 4 and the highest observed in Czechia at 21.7% in wave 8. DM prevalence varied widely subnationally, ranging from 1% in wave 4 (Hovedstaden) to 46.67% in wave 8 (Navarre). The Gini Coefficient demonstrated an increase from 0.142 (SE: 0.028; $p<0.001$) in wave 4 to 0.149 (SE: 0.026; $p<0.001$) in wave 8, with the highest coefficient in wave 4 in Denmark (0.331; SE: 0.085; $p<0.001$). The Concentration Index (CIs) for income and educational level were consistently low and negative. The income CI ranged from -0.143 (SE: 0.008, $p<0.001$) to -0.183 (SE: 0.010, $p<0.001$) between waves 4 and 8, respectively. Similarly, the educational level CI in waves 4 and 8 were -0.145 (SE: 0.008, $p<0.001$) and -0.132 (SE: 0.009, $p<0.001$), respectively. The CI for urbanization displayed both negative and positive, mostly not being statistically significant ($p>0.05$).