

# Mapping social inequalities in cancer in Europe

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**Objective:** To investigate the contribution of socioeconomic inequalities in the incidence and mortality of seventeen major cancer types and to compare the results across European countries.

**Methods:** The study will use the prospective multi-centric EPIC cohort data with an average follow up period of 14.1 years. Participants include 476,160 men and women free of major chronic diseases at enrolment across 29 centres in 10 European countries. Educational level of participants will be used as proxy for socioeconomic status. Cox proportional hazard regression model will be used to explore the association between educational attainments and cancer incidence and mortality by calculate hazard ratios (HRs) and 95% confidence intervals (95% CI). In addition, the Relative Index of Inequality (RII) across educational level will be also computed as a summary measure of inequality that can account for the size of the population of each of the socioeconomic groups. Analysis will be stratified by gender, age-groups and countries.

**Results:** We have carried out some preliminary analyses. Overall, men with the lowest education had a significantly higher risk of being diagnosed with cancer compared to their fellow citizens with the highest education, whereas the opposite was true for women (i.e., those with highest education had the highest risk). Despite these differences, mortality for cancer was always higher in the least educated individuals for both sexes. Corresponding preliminary results for specific cancer types showed a more variegated picture in the association of educational level with incidence and mortality. Results by geographical area/country will be assessed. We will also explore the potential role of modifiable risk factors (e.g., tobacco smoking or healthy lifestyle) in explaining and reducing these inequalities.

**Conclusion:** Our preliminary analyses showed that socioeconomic inequalities in cancer incidence and mortality depend on the specific cancer types considered. The comparison of the social gradient across cancer incidence and cancer mortality for specific cancer types is of public health relevance as it allows identifying areas for socioeconomic inequalities in cancer along the different stages of the cancer continuum.

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