

# Cancer Mortality Trends Over Time in the Grand Duchy of Luxembourg

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## BACKGROUND

Time-trend studies about the incidence, prevalence, and mortality of different types of cancers provide valuable information to decision-makers and enable the identification of risk factors and effective preventive measures to decrease the cancer burden.

Additionally, identified related-environmental or lifestyle factors can be described and used for tailoring cancer interventions for prevention, screening, and care.

## AIM

- To provide a comprehensive analysis of cancer mortality trends in the Grand Duchy of Luxembourg, utilizing population-based data.

## MATERIAL

- The deaths related to the primary cause from 1998-2021 were extracted by cancer type, classified according to the International Statistical Classification of Diseases, 10th edition (ICD-10), from Luxembourg's Registry of causes of deaths.
- Population data for the same period was obtained from the National Institute of statistics and economic studies of the Grand Duchy of Luxembourg (STATEC).

## RESULTS

- Over the study period of 24 years, cancer mortality in Luxembourg residents was investigated and resulted in 23,839 deaths caused by cancer, 54.6% were male and 45.4% were female (Fig. 1).
- The age-standardized mortality rate (per 100,000 inhabitants) for all cancer deaths has decreased slightly among both men and women from 1998 to 2021. Specifically, AAPC in men— was - 2.5 (95% CI: -2.9 to -2.1), while AAPC in women was -1.4 (95% CI: -1.8 to -1.0).
- The analysis showed a significant decrease in the incidence of prostate and colon cancer among males, while among females, there was a significant decrease in the incidence of breast, colon, and ovarian cancer (Fig. 2).

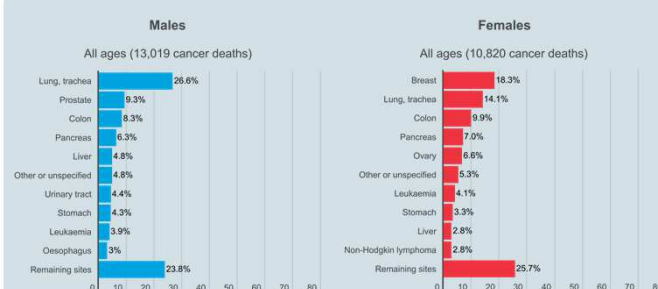


Figure 1. The most frequent death from cancer by sex, 1998–2021.

## METHODS

- Age-standardized mortality rates (ASR) were calculated per 100,000 person-years using the European standard population.
- Average Annual Percentage Changes (AAPC) and the respective 95% confidence intervals (95% CI) were determined using the Joinpoint Regression Program\*.

\* Version 4.9.1.0 - April 2022; Statistical Methodology and Applications Branch, Surveillance Research Program, National Cancer Institute.



Figure 2. AAPC (Average Annual Percent Change) for the top 5 cancer-related deaths by sex from 1998 to 2021. CI: Confidence Interval.

## CONCLUSION

The results generated are important for:

- Gaining essential insights into cancer epidemiology and detecting cancer mortality changes over time
- Informing future public health initiatives on cancer prevention and control
- Helping to evaluate progress toward achieving objectives set out in Luxembourg's second National Cancer Plan (2020–2024)

## CONTACT INFO



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