

Estimating the global burden of cancer in 2013; 14.9 million new cases worldwide

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Researchers from around the world have worked together to try to measure the global burden of cancer and they estimate there were 14.9 million new cases of cancer, 8.2 million deaths and 196.3 million years of a healthy life lost in 2013, according to a Special Communication published online by *JAMA Oncology*.

The Global Burden of Disease study by the Global Burden of Disease Cancer Collaboration group provides a comprehensive assessment of new cancer cases (incidence), and cancer-related death and disability. Researchers relied on cancer registries, vital records, verbal autopsy reports and other sources for cause-of-death data in their study of 28 cancers in 188 [countries](#) from 1990 to 2013. The authors acknowledge that cancer registry and vital records registry data are sparse in many countries.

Overall results indicate that from 1990 to 2013, the proportion of cancer deaths as part of all deaths increased from 12 percent in 1990 to 15 percent in 2013. Between 1990 and 2013, lost years of [healthy life](#) (disability-adjusted life years, DALYs) due to all cancers for both men and [women](#) increased by 29 percent globally.

Men were more likely to develop cancer between birth and age 79, with 1 in 3 men and 1 and 5 women developing cancer worldwide. Tracheal, bronchus and lung (TBL) cancer was the leading cause for cancer death in men and women with 1.6 million deaths. For women, breast cancer was the leading cause of lost years of healthy life globally and for men it

was [lung cancer](#), according to the study.

More information on the Top 10 cancers ranked by the highest number of new cases globally in 2013:

- **Tracheal, Bronchus and Lung Cancer (TBL):** There were an estimated 1.8 million new cases and 1.6 million deaths. TBL caused 34.7 million DALYs in 2013, with 62 percent occurring in [developing countries](#) and 38 percent occurring in [developed countries](#). Men were more likely to develop lung cancer than women, with 1 in 18 men and 1 in 51 women being diagnosed between birth and age 79.
- **Breast Cancer:** There were 1.8 million new cases and 464,000 deaths in 2013. Breast cancer caused 13.1 million DALYs in 2013, with 63 percent occurring in developing countries and 37 percent in developed countries. One in 18 women developed [breast cancer](#) between birth and age 79.
- **Colon and Rectum Cancer:** There were 1.6 million new cases and 771,000 deaths. Colon and rectum cancer caused 15.8 DALYs in 2013, with 56 percent occurring in developing countries and 44 percent occurring in developed countries. The probability of developing colon and rectum cancer before age 79 was higher for men (1 in 27 men) than in women (1 in 43 women).
- **Prostate Cancer:** There were 1.4 million new cases of prostate cancer and 293,000 deaths. Prostate cancer caused 4.8 million DALYs globally in 2013, with 57 percent occurring in developed countries and 43 percent occurring in developing countries.
- **Stomach Cancer:** There were 984,000 new cases and 841,000 deaths. Stomach cancer caused 17.9 million DALYs in 2013, with 77 percent occurring in developing countries and 23 percent occurring in developed countries. One in 36 men and 1 in 84 women developed stomach cancer before age 79.
- **Liver Cancer:** There were 792,000 news cases and 818,000

deaths. Liver cancer caused 20.9 million DALYs in 2013, with 86 percent occurring in developing countries and 14 percent occurring in developed countries. Liver cancer is more common in men, with 1 in 45 men being diagnosed before age 79 compared with 1 in 121 women.

- **Cervical Cancer:** There were 485,000 new cases and 236,000 deaths. Cervical cancer caused 6.9 million DALYs, with 85 percent occurring in developed countries and 15 percent occurring in developing countries. One in 70 women developed cervical cancer between birth and age 79.
- **Non-Hodgkin Lymphoma:** There were 465,000 new cases and 226,000 deaths. Non-Hodgkin lymphoma caused 6.4 million DALYs in 2013, with 71 percent occurring in developing countries and 29 percent occurring in developed countries. One in 103 men and 1 in 151 women developed non-Hodgkin lymphoma between birth and age 79.
- **Esophageal Cancer:** There were 442,000 new cases and 440,000 deaths. Esophageal cancer caused 9.8 million DALYs in 2013, with 84 percent occurring in developing countries and 16 percent occurring in developed countries. Men had a higher probability than women for developing esophageal cancer between birth and age 79, with 1 in 73 men diagnosed compared with 1 in 203 women.
- **Leukemia:** There were 414,000 new cases and 265,000 deaths. Leukemia caused 9.3 million DALYs, with 78 percent occurring in developing and 22 percent occurring in developed countries. One in 127 [men](#) compared with 1 in 203 women developed leukemia between birth and age 79.

"Population-level observations of cancer burden and time trends as presented herein help highlight aspects of cancer epidemiology that can guide intervention programs and advance research in cancer determinants and outcomes. Cancer control strategies have to be

prioritized based on local needs, and current data on cancer burden will be necessary for the development of national NCD (noncommunicable diseases) action and cancer control plans. In acknowledgment of this need, annual updates of the burden of cancer will be published," the article concludes.

In a related editorial, Benjamin O. Anderson, M.D., University of Washington, Seattle, and John Flanigan, M.D., of the Center for Global Health, National Cancer Institute, Rockville, Md., write: "In their global burden of disease (GBD) study, the Institute for Health Metrics and Evaluation (IHME), led by Murray and colleagues, developed a unique systematic analysis approach to assess global and regional causes of death, years of life lost and disability from disease and injury for countries around the world at all economic levels. These mathematically rigorous and elegant methods provide insights to disease burden that previously could only be loosely approximated. In this issue of *JAMA Oncology*, the Global Burden of Disease Cancer Collaboration presents the first GBD analysis by IHME of overall global cancer burden. Key questions that arise are (1) how do the outcomes of GBD analysis for cancer compare with cancer registry methodology developed by IARC (International Agency for Research on Cancer), heretofore considered by most to be the gold standard and (2) what new information might be gleaned to inform policy makers attempting to make headway in limiting avoidable, premature [death](#) and decreasing individual disability related to [cancer](#)?"

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