

## Lung cancer and smoking trends in Brazil

The first results involving the impact of tobacco control policy on the reduction of lung cancer mortality were observed in men during the 1980s, in some high-income countries. In Brazil, beginning in the 2000s, lung cancer mortality in men began to show a statistically significant reduction. Considering the extremely high lung cancer risk attributable to smoking, primary prevention should continue to contribute to a decrease in the incidence and (thus in the mortality) from this type of cancer, which still shows an elevated case-fatality rate.

The Mortality Information System (SIM) in Brazil recorded 21,868 deaths in 2010 from malignant neoplasms of the trachea, bronchi, and lung (most of which specifically involved the lung). Since the mid-1980s, lung cancer has been the leading cause of cancer-related deaths in Brazilian men, and since 2006 it has been the second leading cause in Brazilian women, next only to breast cancer. The gender difference has decreased over time; the male/female mortality rate ratio was 3.2 in 1980, decreasing to 1.7 in 2010. Lung cancer rates in women have shown a strong upward trend in the last 30 years throughout Brazil, both in the State capitals and in the interior, contrary to the trend in men. Due to the long latency period between exposure to smoking and lung cancer diagnosis, this situation indirectly suggests a decrease in smoking among men beginning in the 1980s, especially in the State capitals. Meanwhile, the increase in the number of women smokers beginning in the 1970s appears to have started in the capital cities, quickly reaching women in the interior. The smoking epidemic in Brazil was thus heavily influenced by the adoption of the urban lifestyle in the small towns and countryside, easily identified among women.

Particularly important are the findings from Brazilian studies on lung cancer trends by age bracket, showing that the reduction has occurred in men less than 60 years of age, thereby suggesting that smoking initiation has decreased more as compared to smoking cessation.

The tobacco control policy launched by Brazil in the 1980s has achieved highly positive results, with international recognition. The prevalence of smokers among individuals 15 years or older decreased from 40.3% in males and 26.2% in females in 1989 (according to data from the *National Health and Nutrition Survey*) to 21.6% and 13.1%, respectively, in 2008 (based on the *Special Survey on Smoking*, or PETab), thus demonstrating a consistent reduction, sustained for nearly 20 years. Nevertheless, there are still major differences between the percentages of smokers according to level of schooling, which requires specific strategies to reach lower-income population groups.

Brazil still faces challenges with tobacco control, and additional efforts are needed to ensure even greater reductions, especially in low-income groups. Important measures that should be guaranteed and defended throughout the country include the intensification of smoking cessation interventions in the Brazilian Unified National Health System (SUS) and the ban on smoking in closed environments.

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