While smoking prevalence has declined or remained stable in most countries thanks to public awareness of the health hazard of smoking and the implementation of tobacco control policies, the burden of smoking-related diseases remains colossal and underestimated. Therefore, in this thesis, Joannie Lortet-Tieulent assesses the international burden of two smoking-related diseases —cancer and COPD—at the turn of the twenty-first century, with a special focus on Europe and the USA.

First, incidence trends of the four cancers that are the most associated with smoking are examined in Europe. Second, cigarette design and content have evolved over time and the impact of these changes on the distribution of lung cancer types (histologies) is tracked. Third, in the USA, racial and ethnic disparities in the smoking-attributable burden of cancer are explored. Geographical differences are also investigated, by comparing state-level smoking-attributable cancer deaths. Finally, international trends of COPD and lung cancer mortality rates are contrasted to better understand the role of smoking in COPD mortality.

This work provides the information needed to continue the advocacy for tobacco control and to plan health care resources—both of which are integral components of disease control programs.

Globally, there are one billion smokers.

What is the burden of smoking-related diseases today?