Disease burden calculation in the health impact assessment of the anti-smoking legislation proposal in Hungary

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ACTIVE SMOKING

Health effects

- carcinogenesis
- impaired fertility, teratogenesis
- irritation, chronic inflammation
- atherosclerosis
- immunomodulation
- peptic ulcer, bile stone, Crohn’s disease

Target organs

- respiratory tract
- circulatory system
- gastrointestinal system
- nervous system
- genitourinary system
- haemopoietic and endocrine system

SECOND-HAND SMOKING

Potential health risk!

- **Essentially the same effects**
- **Low concentrations**
  - **— stochastic effects without threshold**
  - **— some components in high proportion**
- **Technical approaches can not eliminate environmental tobacco smoke exposure in indoor places**

FURTHER RESTRICTION OF THE HUNGARIAN ANTI-SMOKING POLICY

Time was on!

- **developing knowledge**
- **international obligations**
- **examples to be followed, applicable experiences**
- **significant health burden of smoking**

GOAL OF THE STUDY

Comprehensive prospective health impact assessment of the proposed amendment of Act No XLII of 1999 on the protection of non-smokers and on certain rules of consumption and trade of tobacco products.

- **health impact assessment of the full prohibition of smoking in closed public- and workplaces and on public transport vehicles**

- **quantitative impact assessment by disease burden calculation**

METHOD

Comprehensive health impact assessment

- **screening**
- **scoping**
- **risk appraisal**
- **reporting**
- **monitoring and evaluation**

METHOD

Calculation of attributable mortality and disability adjusted life years due to smoking for a baseline and the upcoming situation after the legal changes take place.

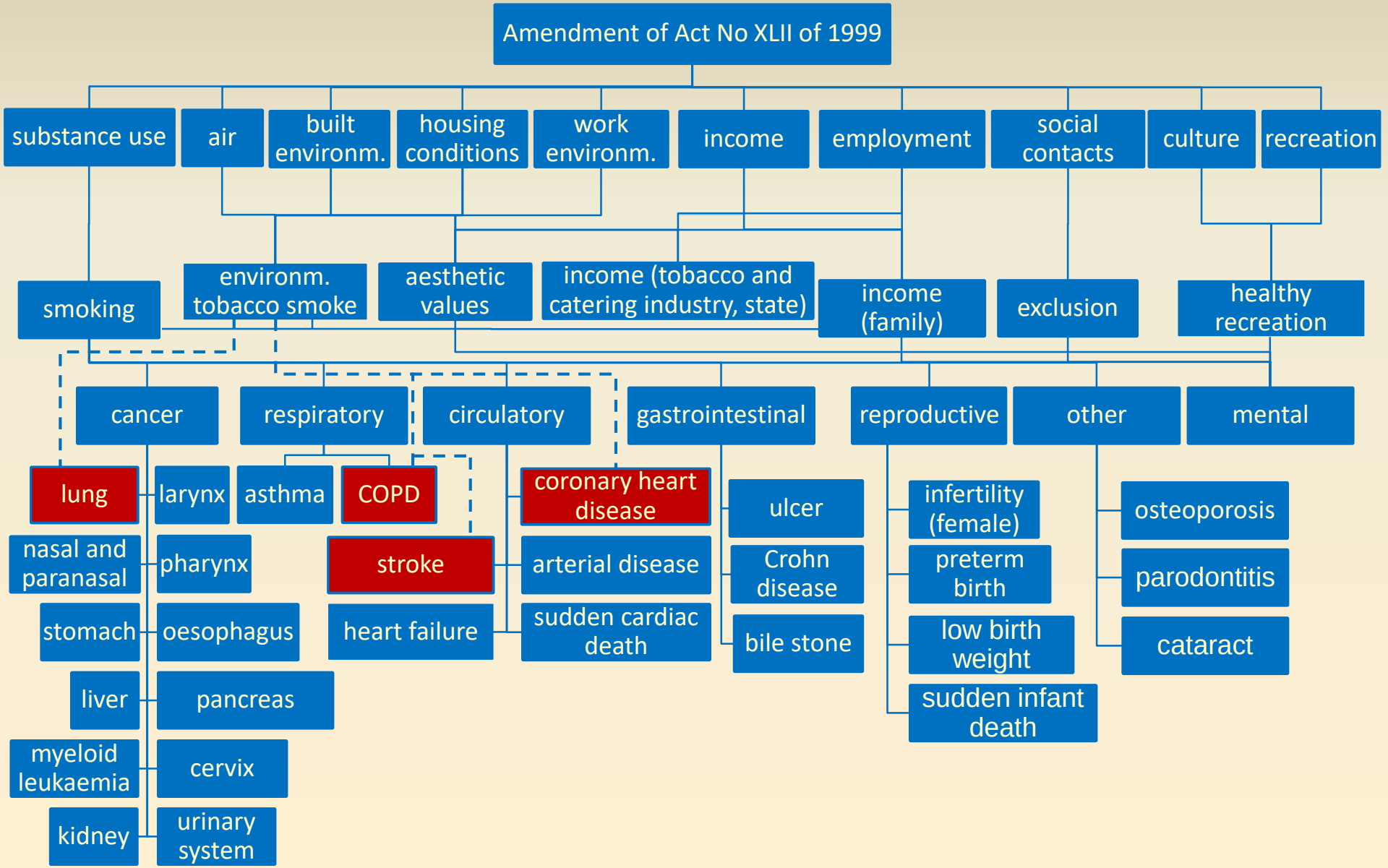
Data sources

- **demographic, mortality data: Central Statistical Office**
- **morbidity data: General Practitioners Morbidity Sentinel Stations Programme, National Cancer Registry, Koranyi National Institute for Tuberculosis and Pulmonology**
- **exposure data: study of the aetiology of chronic liver disease (Univ. of Debrecen, School of Public Health)**
- **association measures: literature**

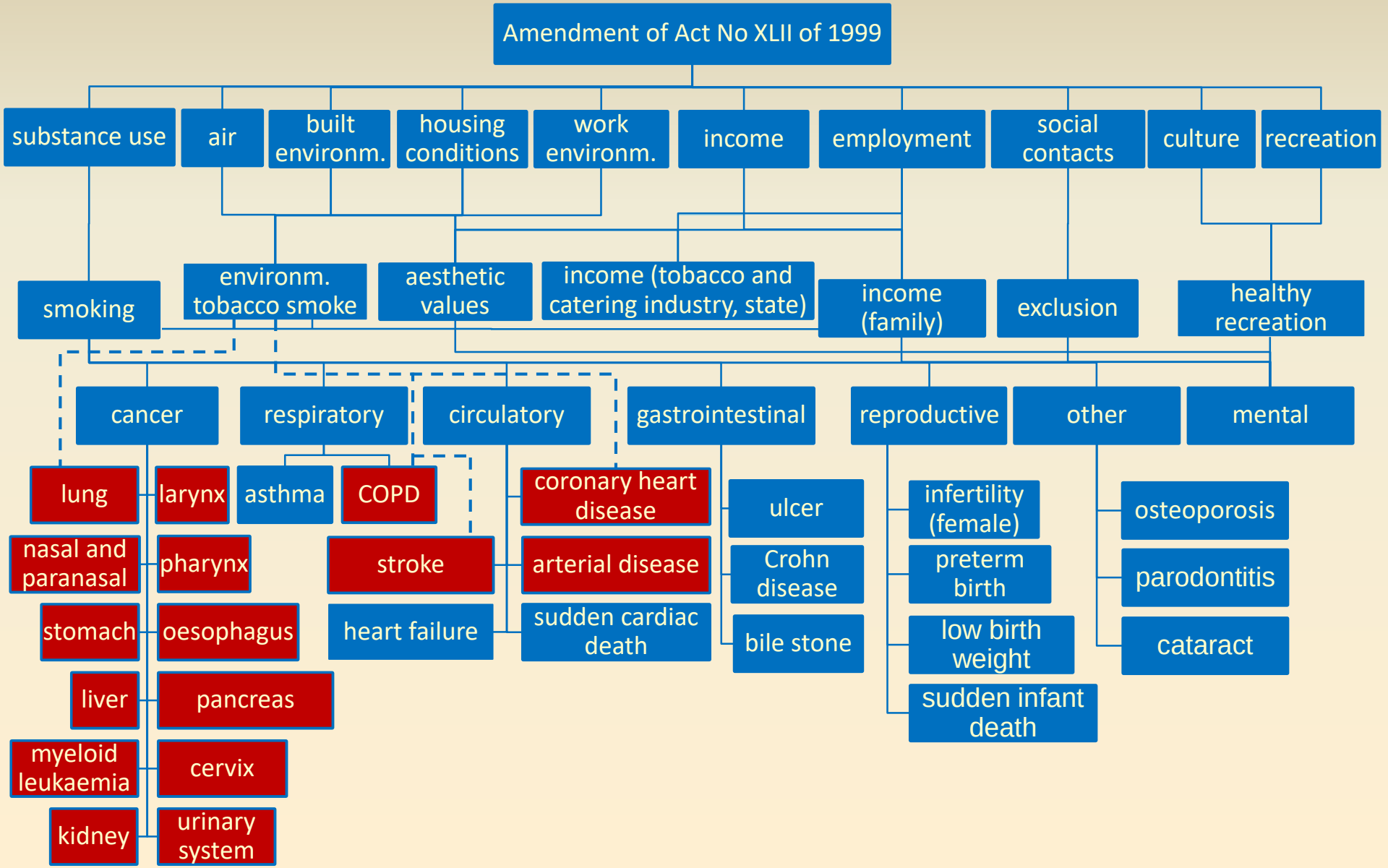
Functions

- **WHO Global burden of disease study**

FULL IMPACT SCHEME



FULL IMPACT SCHEME



EXPOSURE ASSESSMENT

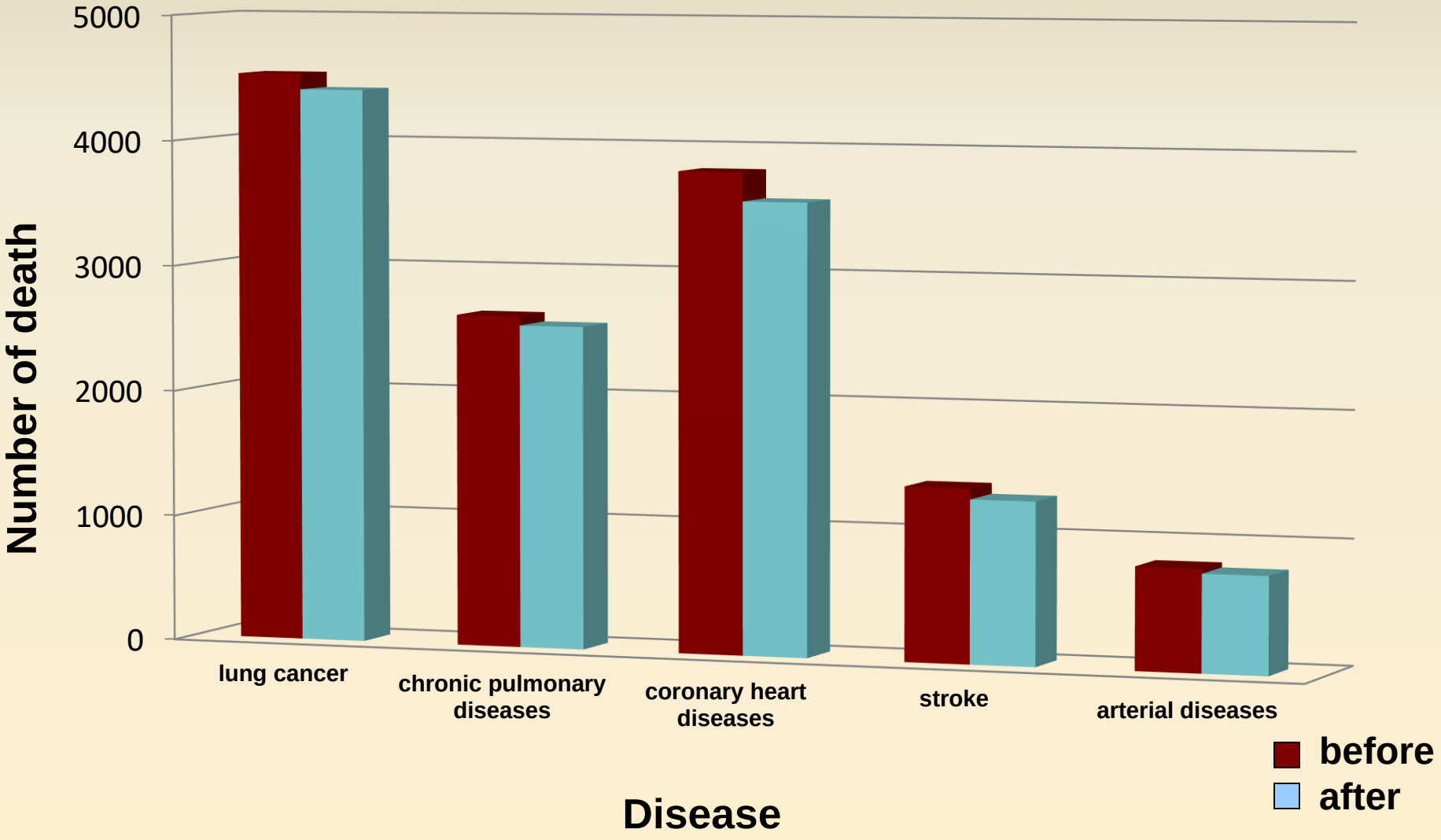
Decrease in prevalence of active smoking

- **7% in the total population**

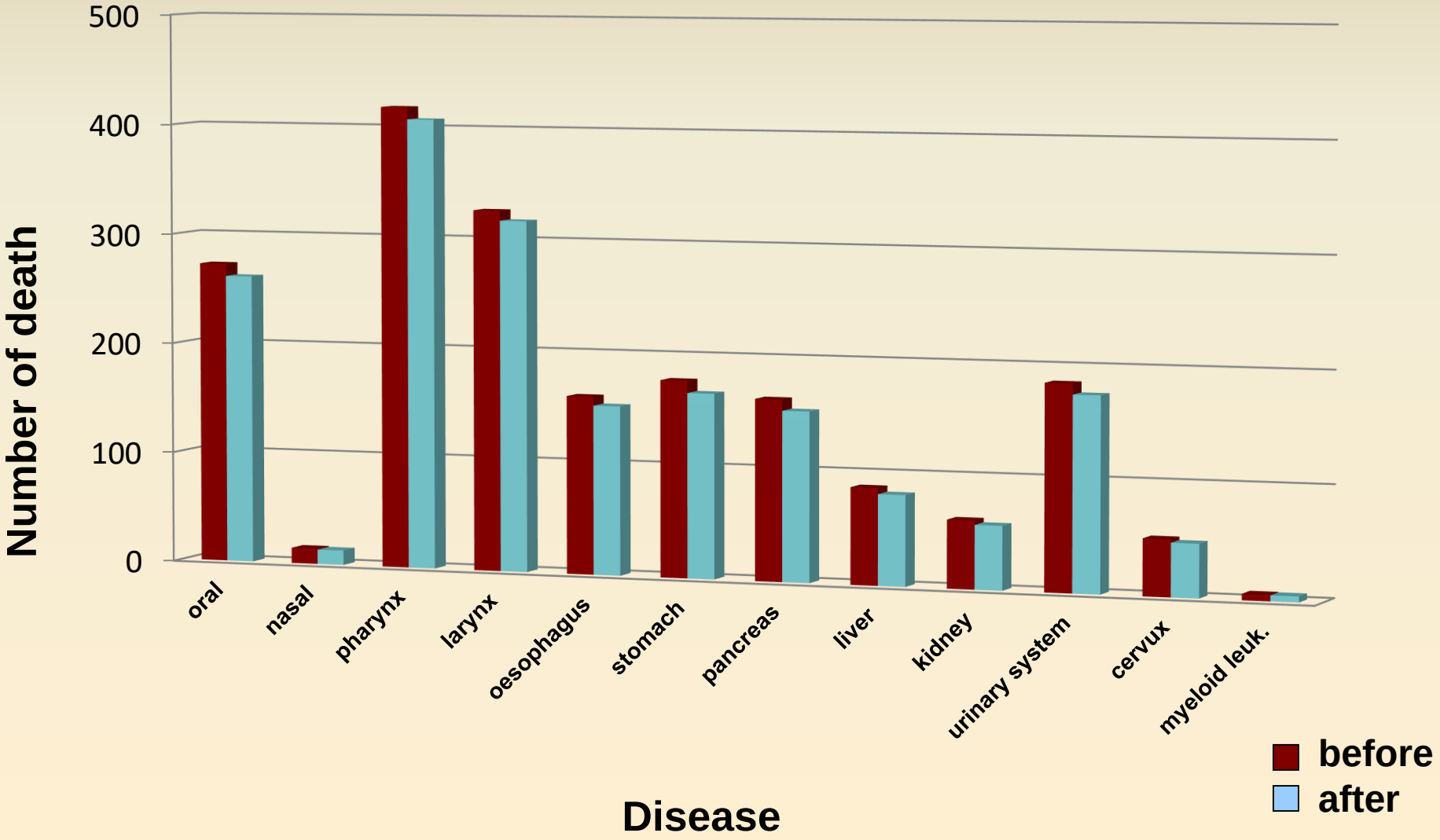
Decrease in prevalence of passive smoking

- **66% in workplaces**
- **95% in hospitality venues**
- **5.9% in homes**

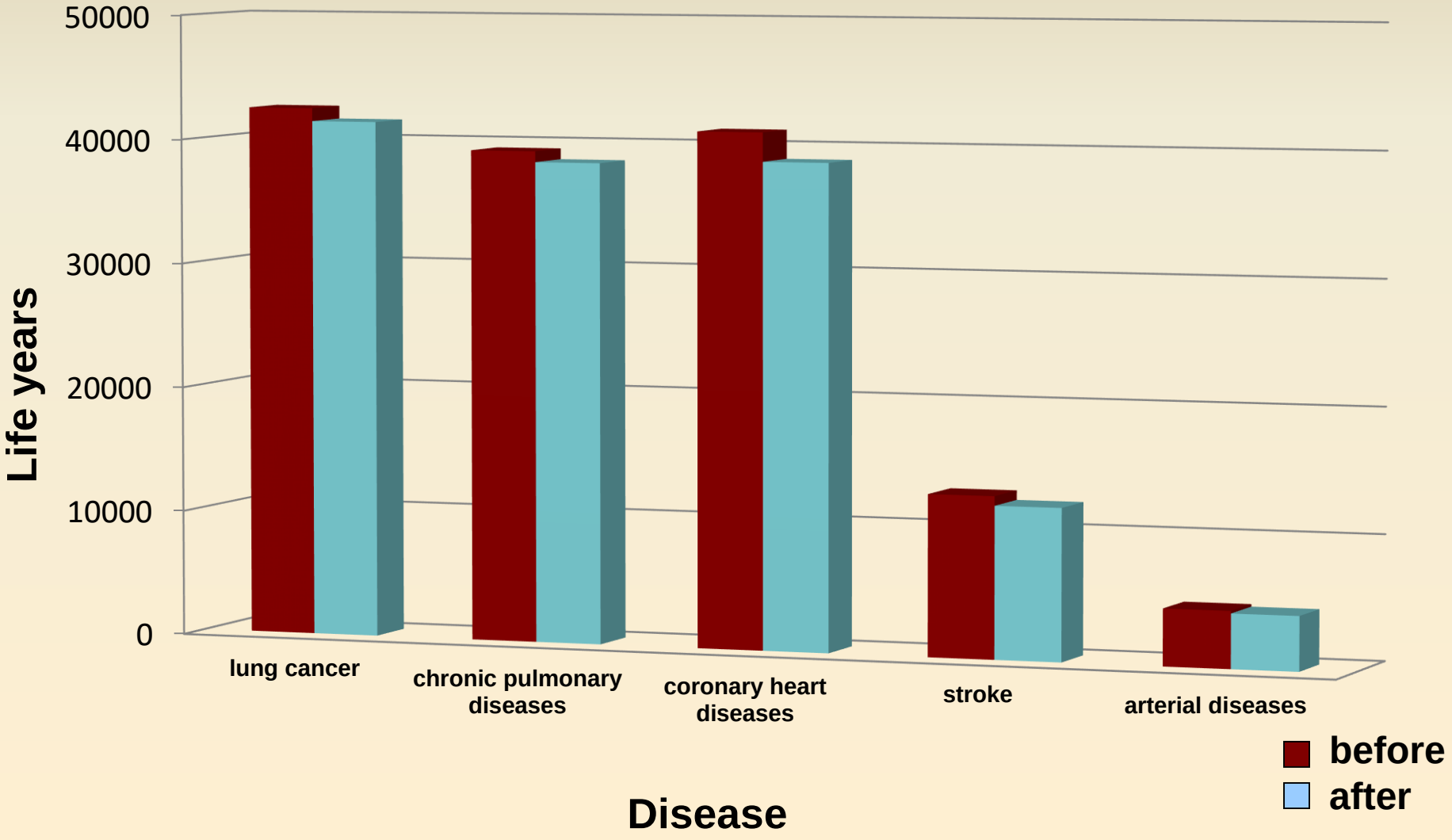
Death attributable to active smoking (1)



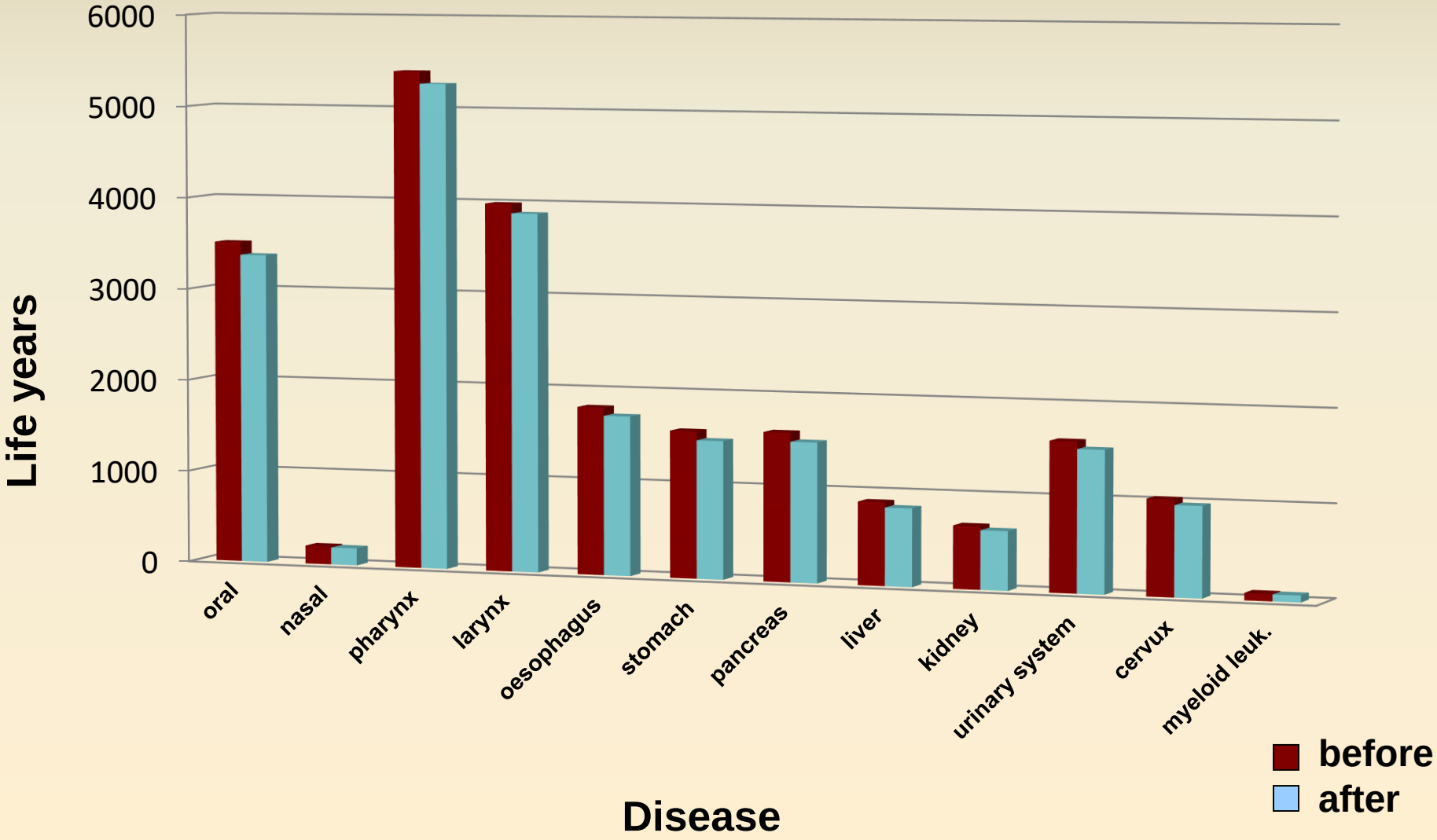
Death attributable to active smoking (2)



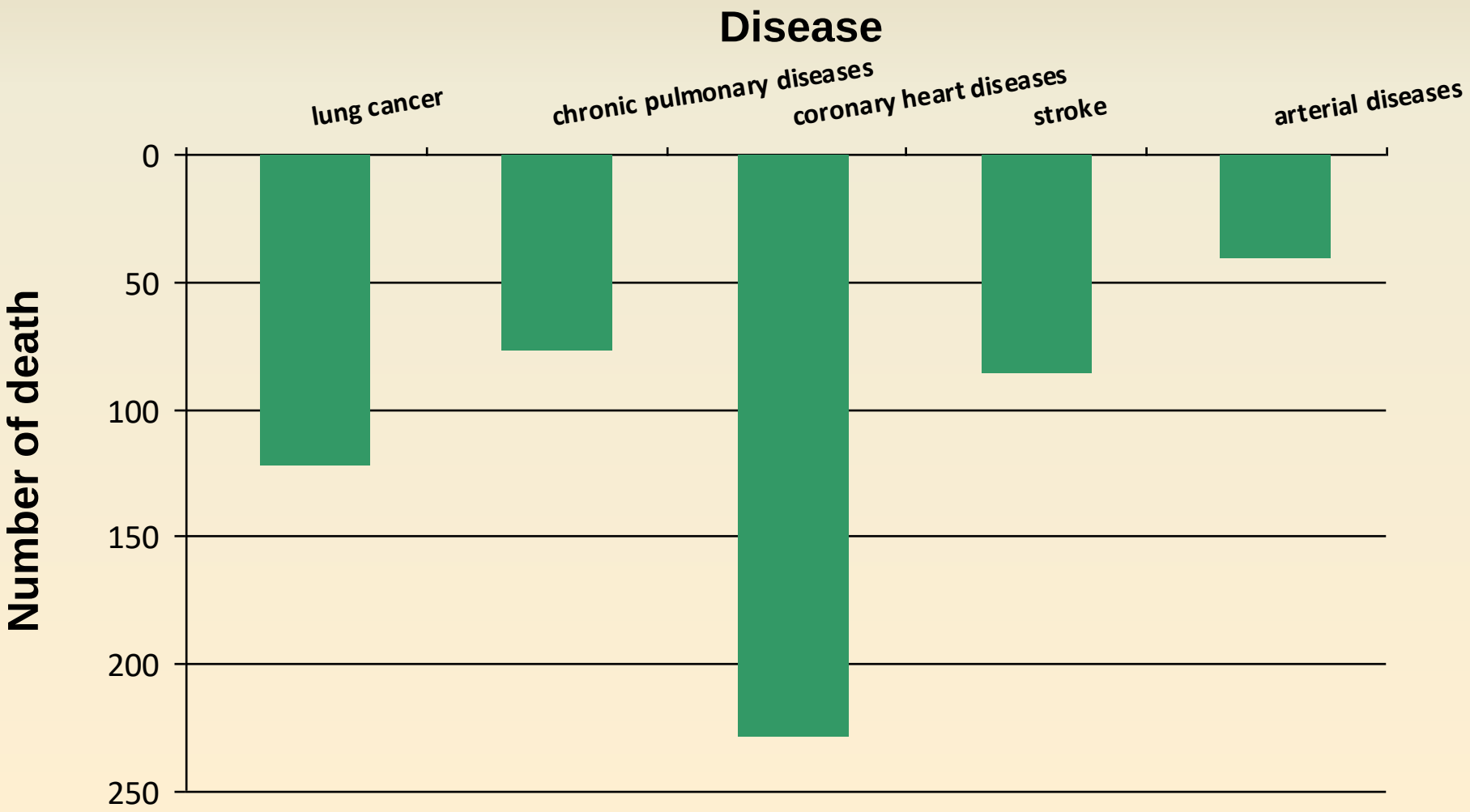
Disability adjusted life years attributable to active smoking (1)



Disability adjusted life years attributable to active smoking (2)



Reduction in death attributable to active smoking (1)



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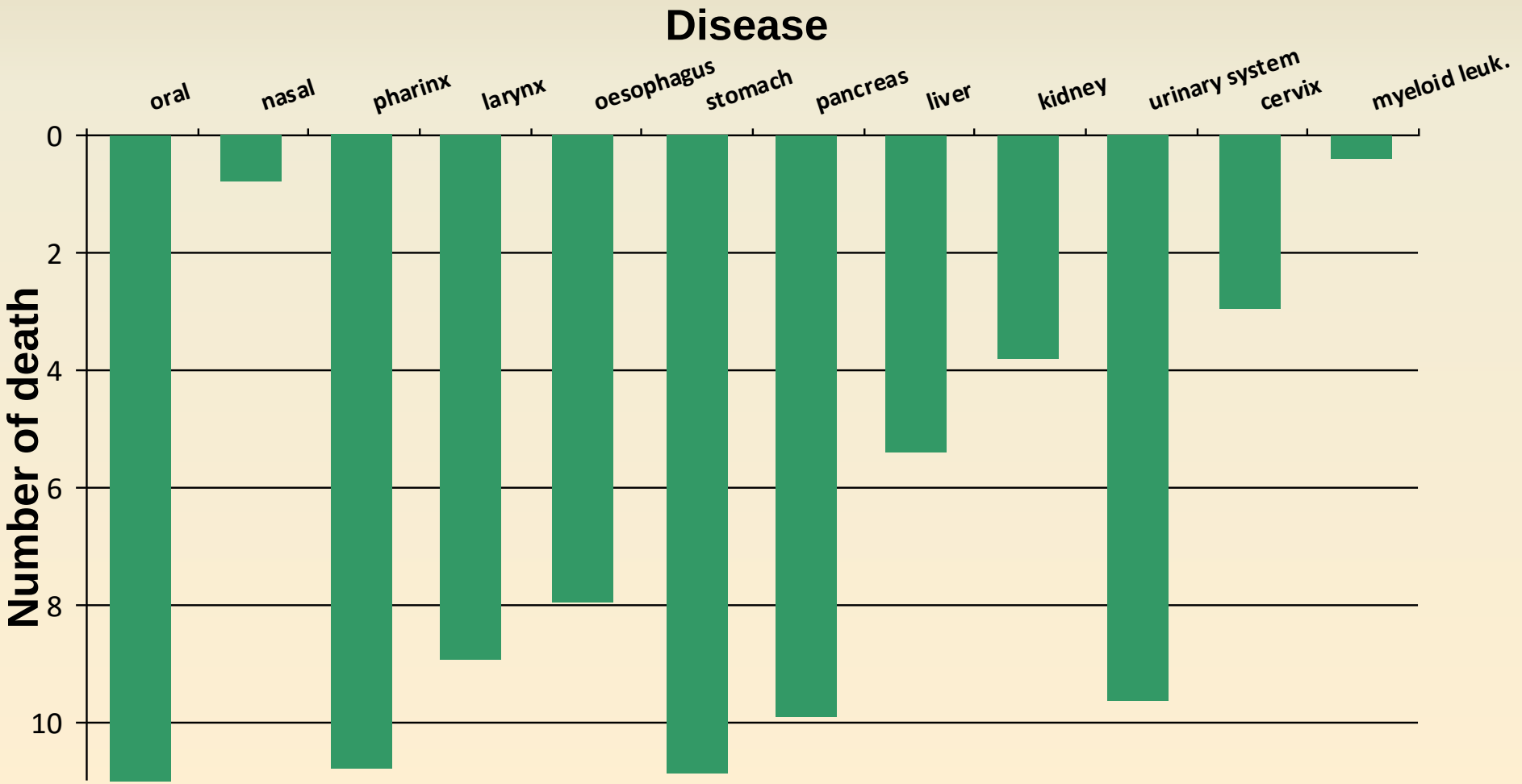
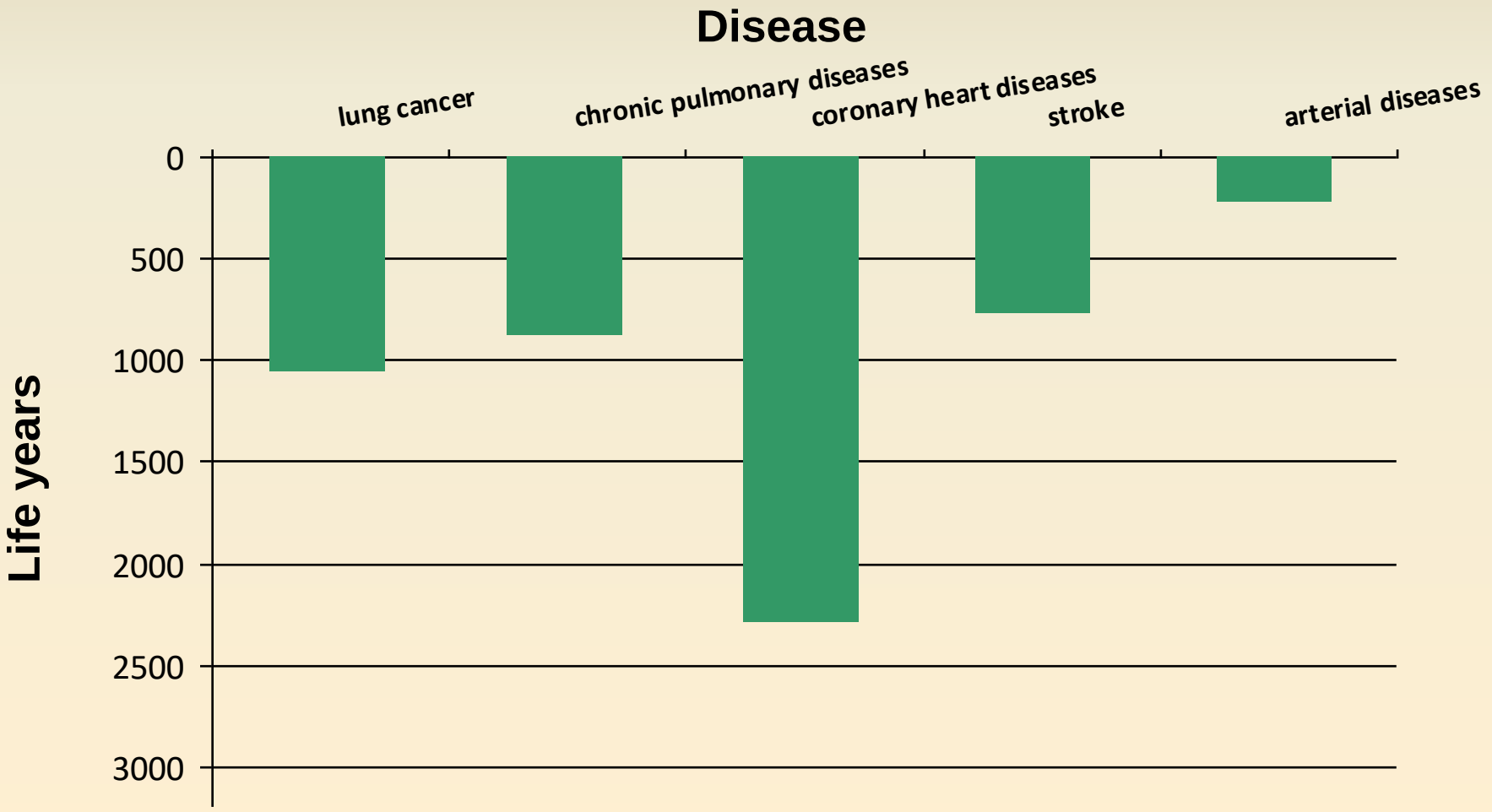
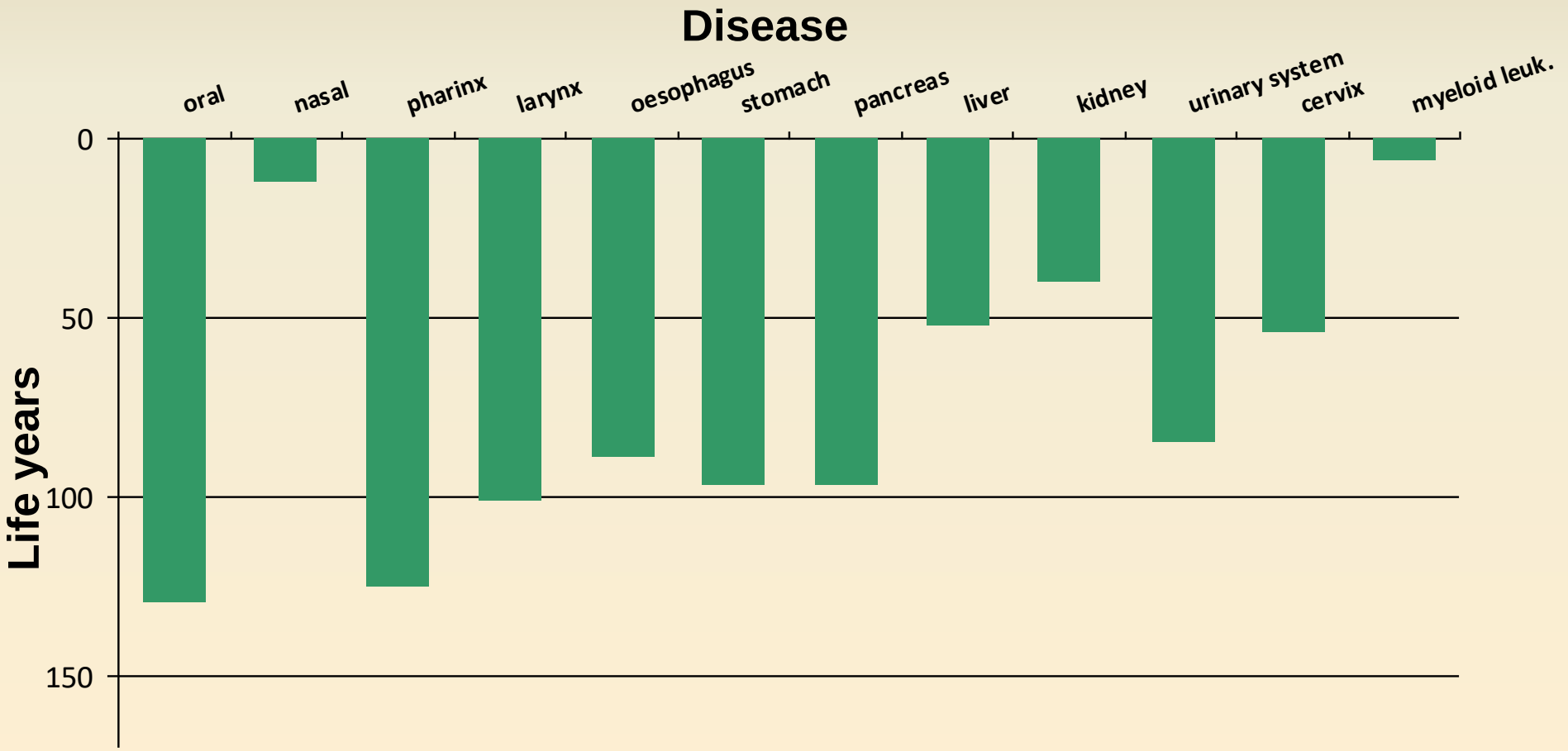


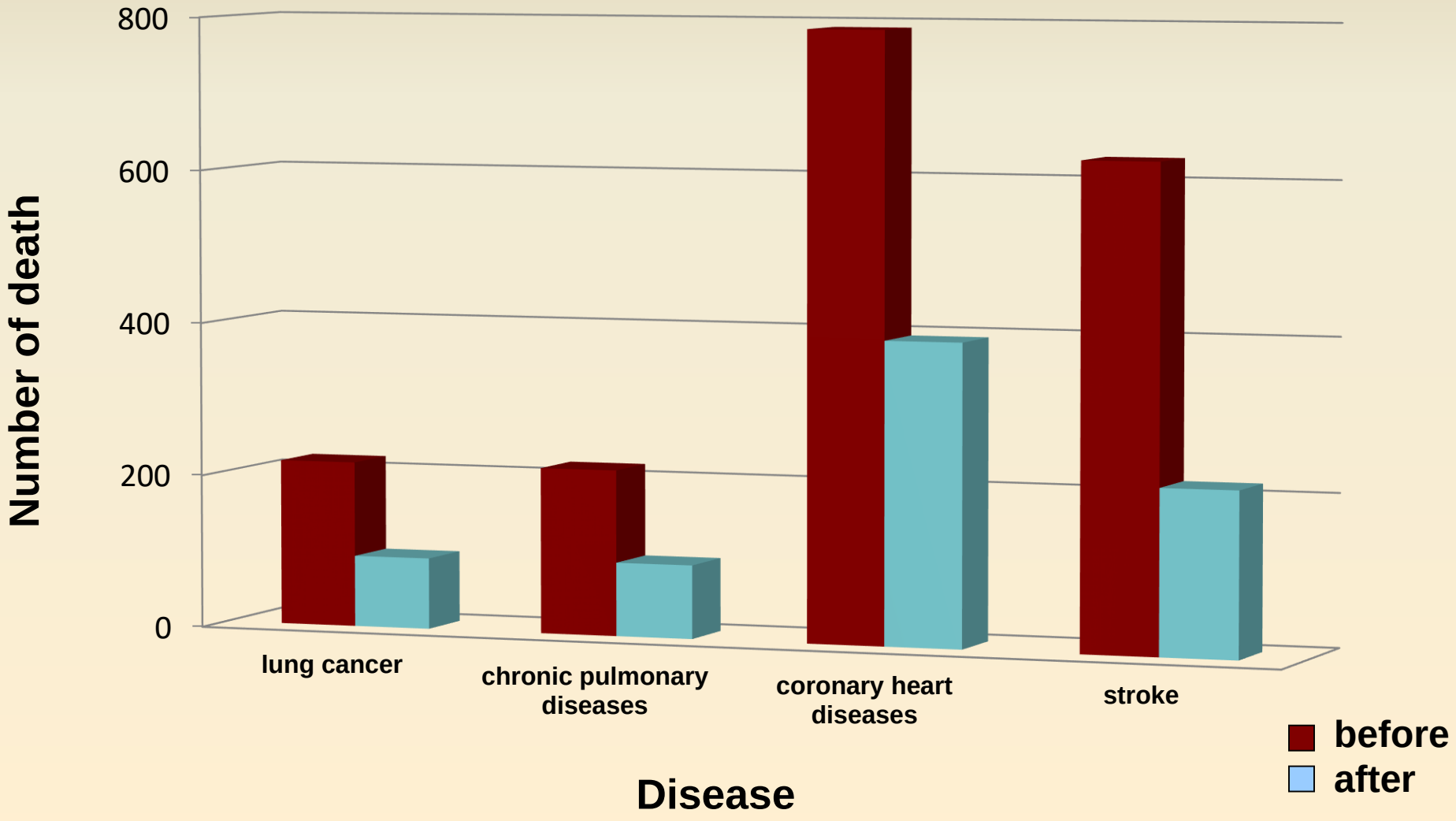
Reduction in disability adjusted life years attributable to active smoking (1)



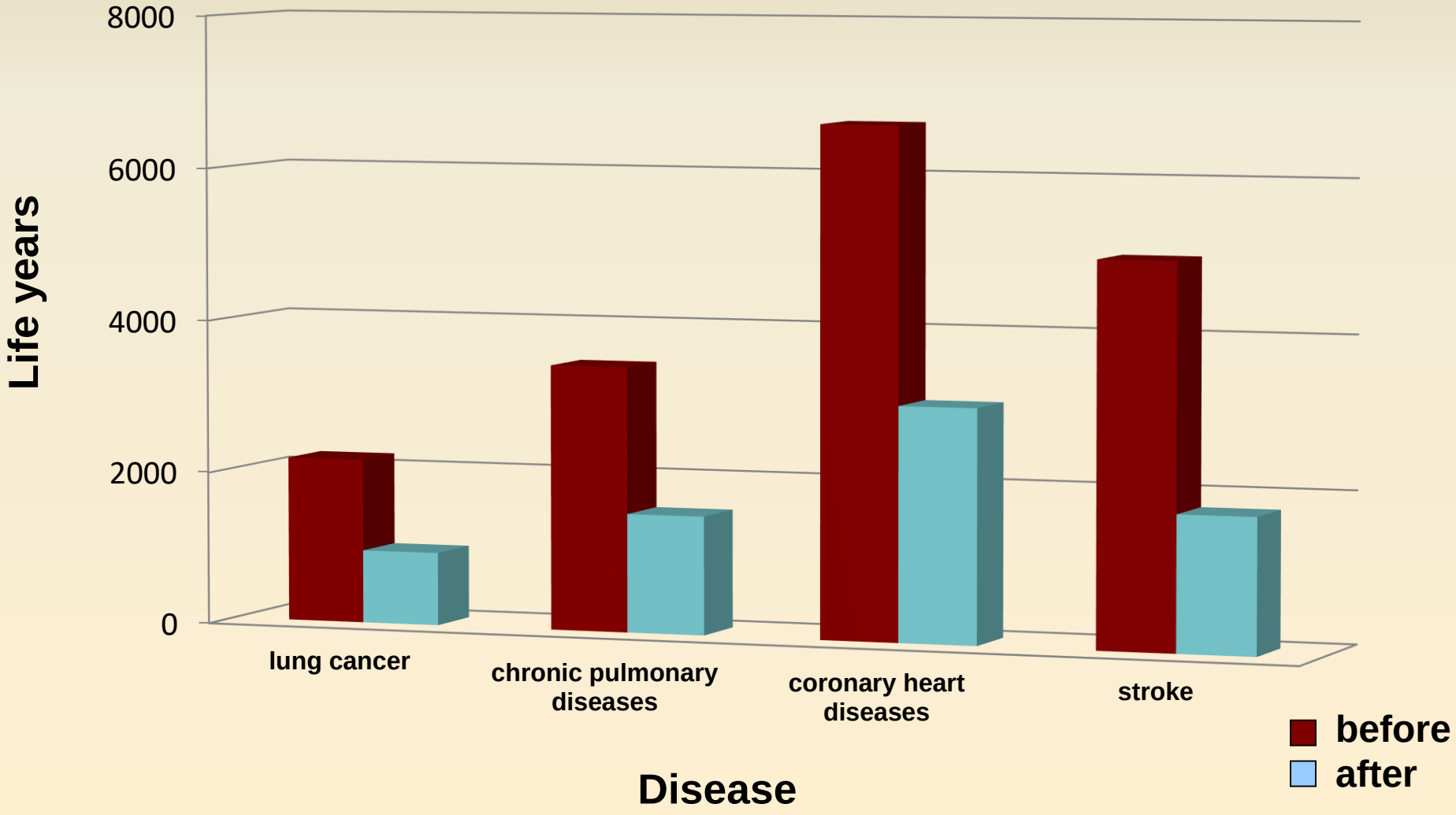
Reduction in disability adjusted life years attributable to active smoking (2)



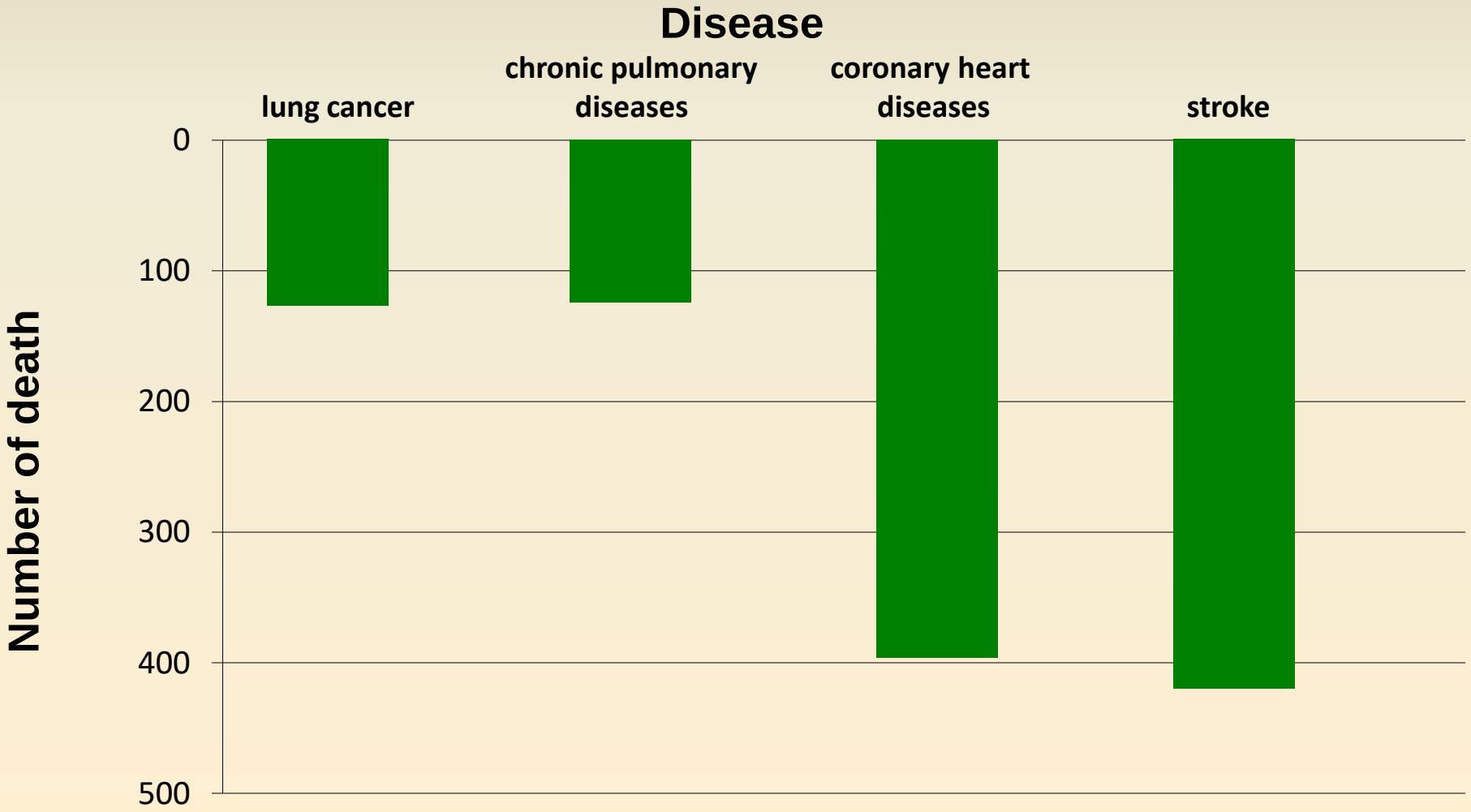
Death attributable to second-hand smoke exposure



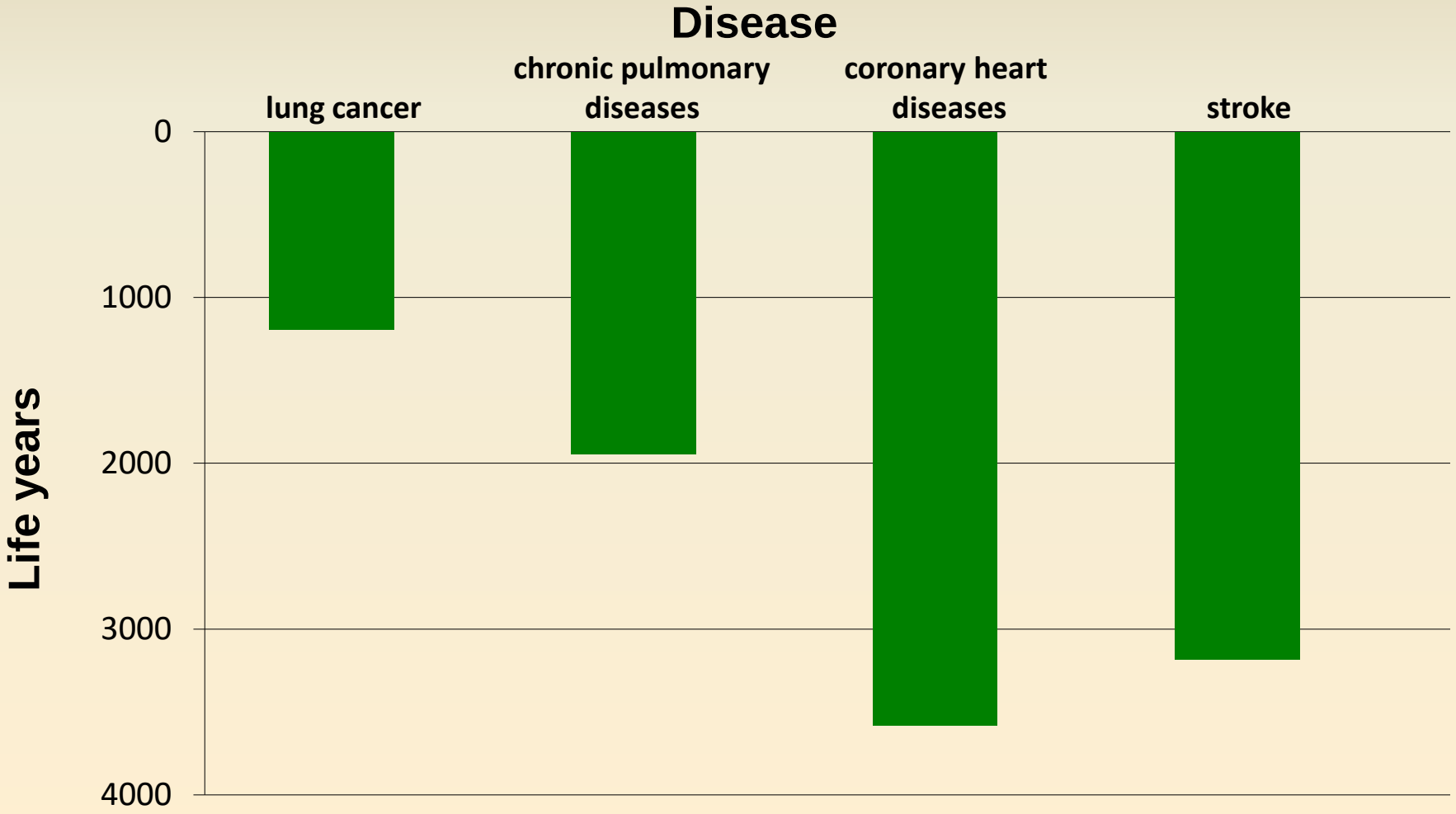
Disability adjusted life years attributable to second-hand smoke exposure



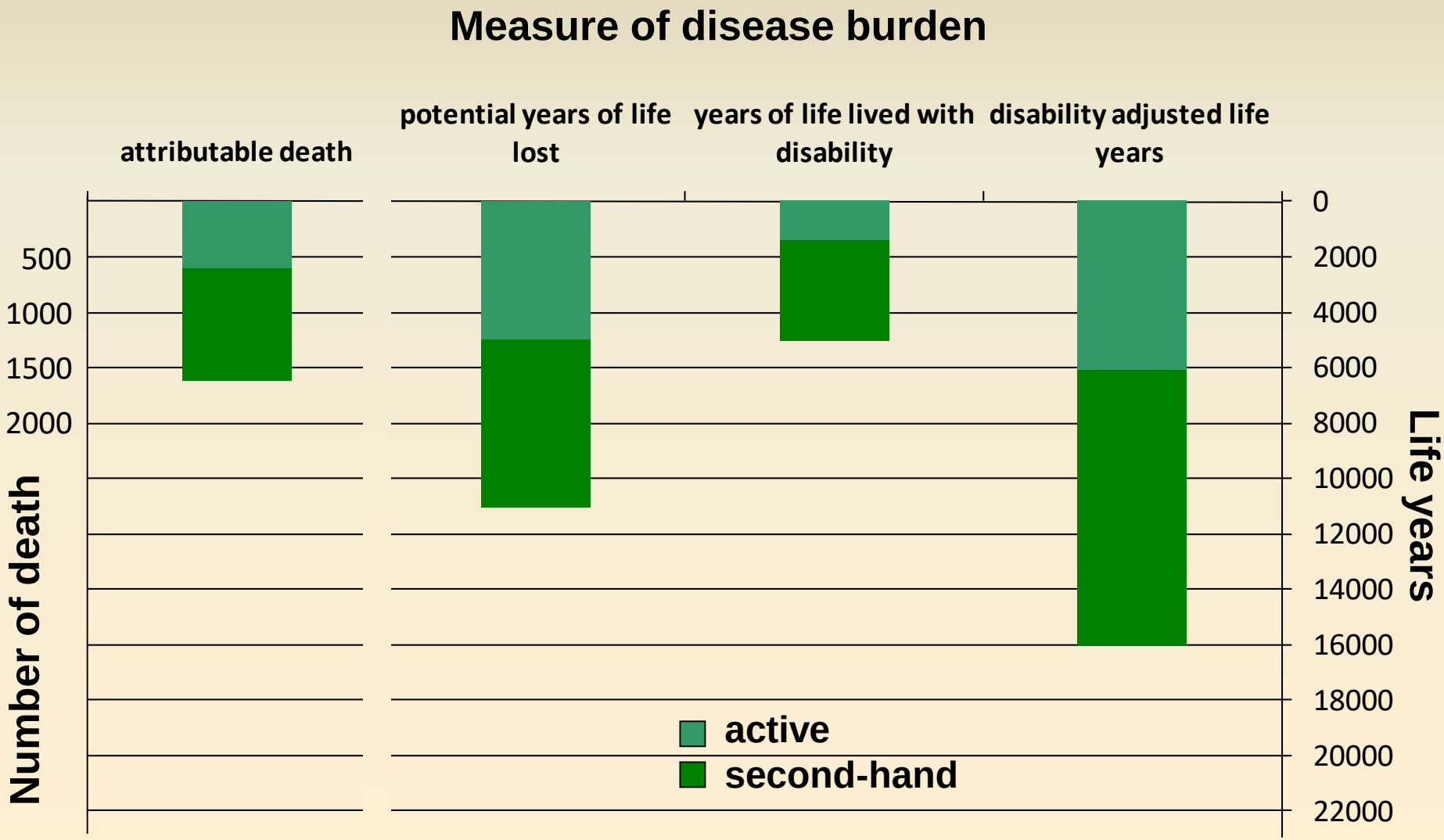
Reduction in death attributable to second-hand smoke exposure



Reduction in the disability adjusted life years attributable to second-hand smoke exposure



All quantifiable health benefit of the proposal



Discussion

- **The effect of smoking prohibition in closed public places on active smoking and on the exposure to second-hand smoke can be quantified with the use of international experiences.**
- **Effect of changes in the prevalence of active smoking and in the exposure to environmental tobacco smoke can be assessed quantitatively for 16 and 4 diseases, respectively.**
- **Major effect is expected on lung cancer, chronic pulmonary diseases, coronary heart diseases and stroke.**
- **The analysis of causal relationships allowing quantitative assessment can conclude that the proposal may save approximately 1700 lives and 16 000 disability adjusted life years annually in long term.**

Thank you