

## The WHO Global burden of disease/ Comparative risk assessment: Objectives and methods

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In October 2002 WHO plans to publish global estimates of burden of disease caused by 20 risk factors. These risk factors include seven environmental factors: water, sanitation and hygiene, indoor air pollution, ambient air pollution, lead, climate change, unsafe food and selected occupational risks. Other risk factors relate to addictive substances, nutrition, life-style, unsafe sex, unsafe health practices, and abuse and violence.

The objective of this analysis is to obtain reliable and comparable estimates of attributable burden of disease and injury. This analysis then forms the basis for estimating avoidable burden that could be achieved by policy action, as well as cost-effectiveness of interventions. The analyses are carried out with a comparable and explicit method, resulting in attributable and avoidable burden. The method allows for shifting exposure distributions towards an alternative distribution, rather than being limited to the “exposed” and “unexposed” categories. Results are expressed in terms of attributable fractions, number of deaths and number of disability-adjusted life years (DALYs) for each of the outcomes induced by the risk factors, and are described by their uncertainty range.

Preliminary analysis indicates that the greatest contributors to disease burden include malnutrition and unsafe sex in the least developed countries (more than 5% of total burden), whereas tobacco, alcohol, high cholesterol, and high blood pressure dominate in developed regions. Among environmental risks, indoor air pollution, water, sanitation and hygiene, and occupational risks are the factors causing the highest disease burden, contributing each between 1 and 5% to the disease burden of developing regions.

WHO continues to develop global estimates of additional environmental risk factors, such as arsenic in drinking water and UV radiation. The development of methods for global estimates will then be adapted and translated into guidance for performing disease burden estimates caused by selected environmental risk factors at country or local level.

Information on environmental burden of disease is available on our web site <http://www.who.int/peh/burden/burdenindex.htm>