

# Salt reduction as a population-based intervention for the prevention of coronary heart diseases: an economic assessment

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**Background** The incidence of coronary heart diseases is increasing in the occupied Palestinian territory (oPt) and hence poses a growing challenge for treatment. Reduction in the intake of dietary salt is a potentially cost-effective approach to reduce the burden of coronary heart diseases. Here, we report the results of an economic assessment of three interventions of salt reduction in the oPt.

**Methods** We did the analysis from a societal perspective of three salt-reduction interventions—population-wide health promotion campaigns, mandatory labelling of food packaging, and mandatory reduction of salt content of processed food. These interventions were assessed individually, and in combinations of two and all three together. We estimated the costs of policies using past experiences, expert opinion, and hospital records, and costs of health care with a standardised unit cost for treatments. We considered the financial implications for the food industry and public sectors. The total cost of implementation of each policy was compared with the do-nothing scenario. We used data reported in reviews of epidemiological studies as estimates of the expected reduction of the current sodium salt consumption attributable to each policy. The expected change in salt intake was then converted into a change in mean population blood pressure based on estimates reported in a meta-analysis. The change in blood pressure was used to estimate the number of deaths prevented or postponed in 10 years, using the Palestinian IMPACT policy model for coronary heart disease. The estimates were compared with the number of deaths from coronary heart disease that would have been expected in relation to the number in the baseline year. This policy model is an epidemiological model that was used to analyse mortality associated with coronary heart disease and risk factor trends in the West Bank, oPt, between 1998 and 2009, and project mortality trends for the future. We used Microsoft Excel 2010 for our analyses.

**Findings** All policies resulted in a reduction in salt intake of 5–30%, leading to changes of 1–20 mm Hg in systolic blood pressure. All scenarios were cost effective compared with the do-nothing scenario. The cost-effectiveness of the scenarios for per life-year gained was \$134·57–1430·62 (purchasing power parity at 2010 exchange rates). Policies for the labelling of food and use of the three interventions together were the most cost effective. These two scenarios were estimated to save costs (\$9 million and \$6 million) and resulted in 945 life-years gained and 2682 life-years gained, respectively.

**Interpretation** Reduction of salt intake reduces the long-term burden of coronary heart diseases. In the oPt, population-based interventions to reduce salt intake are not only cost effective but also cost saving. We recommend a population-wide health promotion campaign, mandatory labelling of food packaging, and mandatory reduction of salt content of processed food.

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## Contributors

AS contributed to the study design, helped in the data analysis, and wrote the first and final drafts of the Abstract. All co-authors contributed to the conceptualisation, design, and data analysis, and reviewed and commented on the Abstract.

## Conflicts of interest

We declare that we have no conflicts of interest.

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