

Massive decline in rates of coronary death in Iceland are largely attributed to risk factor reductions in the population

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Decline attributable to lower levels of cholesterol (36%), blood pressure (26%), and reduced smoking (20%). In the 25 years between 1981 and 2006 mortality rates from coronary heart disease (CHD) in Iceland decreased by a remarkable 80% in men and women aged between 25 and 74 years. How could such a huge decline be explained? Were the health services of Iceland so much better, or were its citizens reducing their risks?

To find out Dr Thor Aspelund and colleagues from the Icelandic Heart Association and the University of Iceland applied a validated CHD analysis model (the IMPACT mortality model) to official Icelandic death statistics, national quality registers, published trials and meta-analyses, clinical audits and a series of national population surveys.

Results of the study are presented at EuroPREvent 2009 and show that approximately three-quarters of the mortality decrease in Iceland was attributable to reductions in risk factors throughout the general population. These were principally (36%) in the reduction of cholesterol levels, smoking (20%) and systolic [blood pressure](#) (26%) and in the greater uptake of physical activity (5%).

In addition, approximately one quarter of the decrease in CHD deaths in Iceland was attributable to treatment in individuals - 7% to secondary prevention (ie, medical treatment or surgery following a heart attack or

other CHD event), 6% to treatments for [heart failure](#), 5% to initial treatments of acute coronary syndrome, and 1% to treating hypertension.

However, not all risk factor profiles improved. Negative trends were found in the prevalence of diabetes (increasing by 5%) and in obesity (increasing by 4%).

"Approximately three-quarters of the large [coronary heart disease](#) mortality decrease in Iceland between 1981 and 2006 was attributable to reductions in major cardiovascular risk factors in the population," says Dr Aspelund. "These were mainly in total serum cholesterol, smoking and blood pressure levels. The findings emphasise the value of a comprehensive strategy that promotes tobacco control and a healthier diet. It also highlights the potential importance of effective, evidence-based medical treatments."

Comparable results have also been found when the IMPACT model was applied in other countries. For example, a fall in CHD deaths in England and Wales between 1981 and 2000 was explained by both an improvement in risk factors in the general population (71%) and treatments in individuals (41%) - though offset by worsening population trends in body weight, exercise and diabetes.

A similar pattern was found in the USA: improved population risk factors explaining 65% (mainly [blood pressure](#), smoking and cholesterol) and treatments 47% - but this was offset by worsening risk factors for 17%.⁴ Overall, the results show that approximately 50-75% of the CHD mortality fall in most European countries and USA between 1980 and 2000 was attributable to reductions in major risk factors.

Source: European Society of Cardiology ([news](#) : [web](#))

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