

PUBLIC HEALTH

Potassium-enriched salt substitution and heart disease*BMJ* <https://doi.org/doi9m> (2020)

Salt has been on the public health agenda for decades, with great investments globally in salt awareness campaigns, front-of-package labelling, industry reformulation of foods — and even activism. Now, Matti Marklund of Tufts University and colleagues have modelled the impact of potassium-enriched salt substitution, via effects on systolic blood pressure, on cardiovascular morbidity and mortality nationally in China.

The study reports that 45% of the adult population in China has hypertension. One in seven deaths from cardiovascular disease and about one in three fatal strokes in those aged under 70 can be attributed to high sodium intake. Discretionary addition of salt to food in the home accounts for 70% of sodium intake in China.

The model mainly utilizes data from the Global Burden of Disease Study and interim data from the Salt Substitute and Stroke Study (SASS). SASS is a cluster randomized trial of potassium-enriched salt substitutes (composed of 70±10% sodium chloride and 30±10% potassium chloride, supplied at 20 grams per individual per day) ongoing in 600 villages across five provinces in China.

The researchers estimate the effects of potassium-enriched salt substitution on systolic blood pressure would prevent

461,000 deaths per year from cardiovascular disease in China, including 208,000 from stroke. It would avert 743,000 non-fatal cardiovascular events and 7.9 million disability-adjusted life years related to cardiovascular disease. The incidence of chronic kidney disease would be reduced by 120,000 cases annually, 32,000 deaths from chronic kidney disease would be prevented, but the increased intake in potassium could potentially result in an additional 11,000 deaths from cardiovascular disease, half of which due to hyperkalaemia in cases of advanced chronic kidney disease.

The modelling is presented in a streamlined manner, and the study represents the kind of persuasive snapshot that may appeal to decision-makers. While the China Health and Nutrition Study of 2015 indicates that the majority of sodium consumed is added in the home, surveys from the US and elsewhere indicate that the domestic salt-shaker contributes relatively less compared with processed foods — and in such regions, industry approaches to salt reduction may be favoured for public health.

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