

## **Reducing salt intake to decrease risk of heart attack and stroke**

St George's researchers have demonstrated the relationship between salt intake and blood pressure in an extensive series of clinical and epidemiological research publications since 2002. This work has influenced UK government and World Health Organisation recommendations for salt intake and significantly reduced the number of deaths from stroke and cardiovascular disease in the UK.



### **Background and research**

MacGregor and He have demonstrated the relationship between salt intake and blood pressure in an extensive series of publications.

In a meta-analysis of 28 trials they showed that a modest reduction in salt intake results in a significant and clinically meaningful reduction in blood pressure. Reducing salt intake from 12 to nine grams per day leads to a fall in blood pressure in both normotensive and hypertensive people that would be doubled with a reduction to six grams per day and tripled with a reduction to three grams per day.

MacGregor and He concluded that reducing salt intake from 12 to three grams per day could reduce the number of strokes by approximately 33 per cent and ischaemic heart disease (IHD) by 25 per cent. In the UK this would mean preventing about 20,500 stroke deaths and 31,400 IHD deaths a year.

Dr He also demonstrated that a lower salt diet in childhood reduces the risk of cardiovascular disease in later life. He also discovered a clear link between the level salt in children's diets

and the consumption of sugary drinks, suggesting that a lower salt intake in children's diets could also have an impact on reducing childhood obesity.

## **Impact**

In 2003 the Scientific Advisory Committee on Nutrition recommended a reduction in daily salt intake. This led to a national publicity campaign that prompted a reduction in salt intake in the UK from 9.5 grams per day in 2003 to 8.6 grams per day 2008. This was calculated to have reduced deaths from cardiovascular disease by 6,000, saving the UK economy £15 billion

The UK food industry has reacted to this research and subsequent recommendations by changing their packaging to clearly show how much salt is in each product, making it easier for people to manage their salt intake.

In 2011 the National Institute for Clinical Excellence (NICE) published the report Guidance on the prevention of cardiovascular disease at the population level. This wide-ranging report's primary recommendations related to salt intake and specifically cited He and MacGregor's work. The report made 12 specific recommendations about salt intake, including accelerating the reduction in salt intake to a maximum of six grams per day per adult by 2015 and three grams by 2025.

Furthermore, the NICE clinical guidelines on management of hypertension, published in 2011, recommended dietary salt reduction in the management of hypertension.

In 2011 NICE recommended continued reduction in dietary salt intake in the UK. A three gram reduction in daily salt intake is calculated to result in 14 to 20,000 fewer deaths from cardiovascular disease annually, a saving of approximately £350 million in healthcare costs, and the gain of 130,000 quality-adjusted life years. The global benefits of this policy have been recognised, with the World Health Organization (WHO) making recommendations for similar levels of salt reduction worldwide.