



Dietary sodium reduction: concerns regarding systematic selection of evidence

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The Viewpoint by Stolarz-Skrzypek *et al.*¹ raises important questions regarding dietary sodium and health; however, several aspects of the evidence on which they base their opinion warrant careful reconsideration. The article reflects a pattern of selective citation and emphasis that does not represent the available evidence base.^{2–5}

A key concern relates to the assessment of sodium intake. Several studies on which the authors rely use methods such as single or limited spot urine samples. Spot urine samples are well known to introduce substantial measurement error in estimating sodium and can produce spurious associations. These limitations have been widely acknowledged; numerous scientific and public health organizations recommend against the use of such methods for evaluating relationships between sodium intake and clinical outcomes.^{2–5} Furthermore, several of the studies are prone to reverse causality. The continued reliance on flawed approaches, without appropriate qualification, overstates the strength and validity of the authors' findings.

Equally concerning is the lack of citation of higher-quality evidence. Meta-analyses of randomized controlled trials with post-trial follow-up demonstrate that even modest reductions in sodium intake (e.g. from approximately 3600 to 2700 mg/day) are associated with meaningful (~26%) reductions in cardiovascular disease.² In parallel, an analysis of high-quality prospective cohort studies using the recommended multiple non-consecutive 24-h urine collections reports a largely linear association between sodium intake and cardiovascular outcomes down to levels below 2000mg/day.^{2,3} These analyses of randomized controlled trials and cohort studies do not show evidence of a lower threshold of benefit from reducing dietary sodium. Stolarz-Skrzypek *et al.* do not address this evidence that forms the central component of the evidence base underpinning current international dietary recommendations.

Taken together, the selective emphasis on studies with known methodological limitations, along with the omission of more rigorous evidence, creates a misleading representation of the current state of knowledge.⁵ While differences in interpretation are inherent to scientific discourse, the repeated prioritization of

discordant findings without consideration of stronger evidence raises important questions about the Viewpoint authors' balance in evidence synthesis.⁵

The Viewpoint also appears to understate the significance of sodium reduction for blood pressure control.² The relationship between sodium intake and blood pressure is one of the most consistently demonstrated findings in nutrition science. Reductions in dietary sodium lower blood pressure across diverse populations and given the high lifetime risk of hypertension in high-income countries, even modest population-level reductions in sodium intake can yield substantial public health benefits.²

Sodium reduction not only has a clinical impact but also is widely recognized as a highly cost-effective intervention.² Modelling studies consistently demonstrate that lowering population sodium intake leads to meaningful reductions in hypertension prevalence, uncontrolled hypertension, cardiovascular events, and healthcare expenditures.² For this reason, sodium reduction remains a cornerstone of global cardiovascular disease prevention strategies.^{2–4}

Considering the substantial global burden of disease attributable to excess dietary sodium intake, it is essential that discussions in the scientific literature accurately reflect the strength, consistency, and methodological rigour of the available evidence (e.g. National Academies of Sciences, Engineering, and Medicine). A balanced and transparent approach (e.g. Committee on Publication Ethics, National Academies of Sciences, Engineering, and Medicine report on dietary sodium) to evidence synthesis remains fundamental to informing sound clinical guidance and effective public health policy.

Author contributions

N.R.C.C. drafted the letter which was reviewed and revised by J.G. and F.P.C. All gave final approval and agree to be accountable for all aspects of work ensuring integrity and accuracy.

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