PS14 **A SYSTEMATIC REVIEW OF EVIDENCE ON MALIGNANT SPINAL METASTASES: TECHNOLOGIES FOR IDENTIFYING PATIENTS AT HIGH RISK OF VERTEBRAL FRACTURE AND SPINAL CORD COMPRESSION**

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Background Spinal metastases are common and can lead to significant morbidity and reduction in quality of life towards the end of life due to spinal cord compression (SCC). Between 5% and 20% of patients with spinal metastases develop metastatic spinal cord compression (MSCC) during the course of their disease. Understanding early diagnosis of spinal metastases and prediction of collapse of the metastatic vertebrae is important.
Methods A systematic review was undertaken to identify patients at high risk of vertebral fracture and SCC. Thirteen electronic bibliographic databases were searched. A quality assessment instrument was used to assess bias in six domains: study population, attrition, prognostic factor measurement, outcome measurement, confounding measurement and account, and analysis.
Results 2,425 potentially relevant articles were identified, of which 31 met the inclusion criteria. Seventeen studies reported retrospective data, 10 were prospective studies, and three were other study designs. There was one systematic review. There were no randomised controlled trials. There were approximately 7,900 participants (4 studies did not provide this information) in the included studies and 5,782 participants were analysed (3 studies did not provide this information). The sample sizes ranged from 41 to 859. Cancers reported were: lung alone (n=3); prostate alone (n=6); breast alone (n=7); mixed cancers (n=13); and unclear (n=1). Ninety-three prognostic factors were identified as potentially significant in predicting risk of SCC or collapse. Many of the included studies provided limited information about patient population and selection criteria and they varied in methodological quality, rigour and transparency. Several studies with mixed case populations identified type of cancer (e.g. breast, lung or prostate cancer) as a significant factor in predicting SCC, but determining the risk differential is difficult because of residual bias in studies.
Conclusion Perhaps not surprisingly, the overall findings from this systematic review showed that the more spinal metastases present and the longer a patient is at risk, the greater the chance of development of SCC and collapse. Other prognostic factors include total burden of metastatic disease and immediate symptomatology suggestive of spinal column involvement. Current clinical consensus favours magnetic resonance imaging and computed tomography for investigation of SCC and vertebral fracture, but this important area is clearly under-researched.

PS15 **POLICY ACTIONS TO REDUCE DIETARY SALT INTAKE: PRICE, PRODUCT, PLACE OR PROMOTION? A REVIEW OF THE EVIDENCE**

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Background A range of policies aim to reduce salt intake; however, their relative effects remain unclear. We undertook a narrative synthesis of existing evidence to determine the most promising approaches.
Methods We searched for systematic reviews, then empirical and modelling studies of salt reduction policies in six electronic databases. Reference lists of retrieved articles were screened and key informants were asked to identify further reviews and empirical/ modelling studies. Items were assessed for inclusion and data were extracted into predesigned forms. Results were categorised using a modified version of the marketing four P's framework: Price, Product, Place and Promotion.
Results *Price*: A US sodium excise tax may reduce sodium intake (by 6%), systolic blood pressure (by 0.9mmHg), stroke (by 10%) and myocardial infarction (by 5%) over the lifetime of those aged 40 – 85 years. *(One modelling study)*
Product: Voluntary US salt limits might achieve lifetime reductions in sodium intake (-9.5%), blood pressure (-1.25mmHg), myocardial infarction (-5%) and stroke (-10%). In Australia, mandatory salt limits could reduce cardiovascular disease (by 18%) but only by 1% with voluntary intervention. *(Two modelling studies)*
Promotion: Intensive advice, support and encouragement to restrict dietary sodium intake led to significant long term reductions in urinary sodium excretion, systolic blood pressure (-1.1mmHg) and disease burden (-0.5%.) Interventions involving advertising/marketing/labelling have only been evaluated within multi-component interventions. *(One systematic review.)*
Place: Place-based interventions (targeting schools, workplaces and community settings) have only been evaluated within multi-component interventions.
Multi-component interventions: The UK FSA product and promotion-based initiatives reduced salt intake by approximately 10%. Two modelling studies estimate that similar interventions in low- and middle-income countries might achieve a 15% reduction in salt consumption, globally averting perhaps 1 million deaths and 21 million disability-adjusted life years annually. Modelling estimates from Norway suggest that combining taxes and subsidies with product and price interventions might reduce daily salt intake by 6g. Survey data reveal that in Finland between 1979 – 2002, a comprehensive and mandatory nutrition intervention (using regulations targeting price, product, place and promotion) reduced urinary sodium excretion from 13 to 10 g/day in men and from 10.5 to 7.5g/ day in women. *(Two empirical studies and three modelling studies)*
Conclusion There is patchy evidence on the effectiveness of policy actions to reduce dietary salt intake. Dietary advice can achieve modest benefits. Modelling suggests taxes and reformulation may be effective (particularly when mandatory). Empirical and modelling studies indicate multi-component interventions could be particularly powerful.

PS16 **WHICH IS MORE EFFECTIVE, A UNIVERSAL OR TARGETED APPROACH, TO IMPLEMENTING THE NATIONAL HEALTHY START PROGRAMME? A MIXED METHODS STUDY**

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Background Healthy Start is a statutory scheme in the UK, aiming to improve the health of children and pregnant or lactating women by providing food vouchers and vitamins. The Department of Health intended the intervention to be targeted to low incomes families (a targeted approach), but in some areas Healthy Start vitamins are available to eligible mothers and children independent of income (a universal approach). The aim of this study is to investigate which approach is more effective and to identify barriers to implementation.
Methods 1) Systematic review of the literature to identify which approach, universal vs. targeted, achieves the highest coverage of vitamin use in pre-school children and pregnant women.; 2) Using national data, a comparison of vitamin uptake rates in targeted and universal areas.; 3) In depth qualitative interviews with 30 commissioners, providers and service users from a targeted and universal area. Data were thematically analysed.