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=8); 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.

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.