Title: A mixed method systematic review of primary school based interventions to promote physical activity and/or reduce sedentary behaviour

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Introduction: Evidence points to a decline in physical activity from 5 to 7 years and confirms few children engage in the recommended 60 minutes of daily moderate to vigorous physical activity. The primary school is an important setting to promote physical activity since children spend a substantial part of their waking hours at school and form early attitudes and health behaviours.

Methods: In order to address the question are primary school based interventions effective at increasing physical activity and/or reducing sedentary behaviour in children aged 5 to 11 years a mixed method systematic review was conducted. The PRISMA guidelines informed the methodology. Following literature searching the mixed methods appraisal tool was used to assess the methodological quality of the literature. The Prospero record provides more methodological details (CRD42017082184). The intervention applied was summarised using the TIDieR checklist.

Results and Discussion: Over 80 studies of variable methodological approach and quality were identified for inclusion and it was evident research in this field had grown in the last 10 years. Research findings were analysed in relation to the theory of expanded (e.g. before and after school clubs, class breaks, and physically active learning), extended (e.g. increased physical education or play/break times) or enhanced (e.g. increasing physical activity within PE, play/break times) opportunities. A number of multi-component interventions were also identified. There is a need for research to begin addressing not just whether a school based intervention works but rather for who it works, how and why.