

## **Feasibility of a physical activity intervention for children with type 1 diabetes: Steps to Active Kids with Diabetes (STAK-D)**

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**Objectives** This study describes the development and feasibility evaluation of a physical activity intervention for children with type 1 diabetes called 'Steps to Active Kids with Diabetes' (STAK-D). It aims to explore the feasibility and acceptability of the intervention and study design.

**Methods** Thirteen children aged 9-11 years and their parents were recruited from a paediatric diabetes clinic in the UK. A process evaluation was conducted alongside a two-arm randomised feasibility trial, including assessment of rate of recruitment, adherence, retention, data completion and burden, fidelity of intervention delivery and adverse events. Secondary outcome measures included; physical activity, self-efficacy and parental fear of hypoglycaemia. Qualitative interviews with children (n=9), parents (n=8), healthcare professionals (n=3) and STAK-D volunteers (n=8) explored intervention acceptability. Interviews were analysed thematically.

**Results** Rate of recruitment was 25%, with 77% retention at 3-month follow-up. Study burden was low, data completion was high and the intervention was delivered as per protocol. No serious adverse event was reported. Engagement with intervention materials was generally good but attendance at group activity sessions was low. Interview analysis identified: (1) barriers to recruitment, including lack of clinic endorsement; (2) motivation for participation, including the desire to learn about activity level; (3) facilitators of engagement, including enjoyment and family involvement; (4) experience of data collection, including the acceptability of wrist-worn accelerometers, and; (5) perceived benefits of STAK-D, including increased understanding, parental engagement and family-oriented physical activity.

**Conclusions** STAK-D was feasible and acceptable to children, their parents and healthcare professionals, but group sessions may be logistically difficult. Recruitment and retention may be improved with a clinic-wide approach to recruitment.