CRD summary
This review concluded that there was little evidence for effectiveness of family involvement methods in programmes for promoting physical activity in children. The authors’ conclusions reflect the evidence presented but, given shortcomings for the review process, limitations in study design and poor study quality, the conclusions should be interpreted with caution.

Authors’ objectives
To assess the best methods for involving parents in interventions for children to increase their physical activity.

Searching
PubMed (including MEDLINE), PsycINFO and The Cochrane Library were searched for peer-reviewed English-language studies to January 2008; search terms were reported. Additional studies were sought from previously published reviews.

Study selection
Studies of any design with the aim to increase physical activity among otherwise healthy children or adolescents and which included a family intervention and a physical activity or exercise component were eligible for inclusion. Physical activity behaviour was reported as an outcome and included any self- or parent-report of physical activity behaviours and/or objective measures of physical activity (such as accelerometers or pedometers). Studies that targeted overweight children or adolescents were excluded, as were those that: assessed children with a specific medical problem; did not publish outcomes data; did not have an intervention; or were a literature review.

In the included studies, the age of participants ranged from nine months to 18 years; most studies were in children younger than 12 years and some studies involved girls only. The primary setting of the program for most studies was either school or community. Most behavioural theories were social cognitive theory or social learning theory; more than one theory was used for the intervention framework in some studies. In the included studies, types of interaction with program staff included: face-to-face educational programs or parent training (comprising parent training, family counselling and preventive messages during family visits); family participatory exercise programs; telephone communication; organised activities (family workshops or fun nights); and educational materials sent home (newsletters, homework, in print or Internet). Duration of the intervention ranged from 12 weeks to six years.

The authors stated neither how the papers were selected for the review nor how many reviewers performed the selection.

Assessment of study quality
The study quality of randomised controlled trials (RCTs) was assessed using the extended CONSORT (Consolidated Standards of Reporting Trials) 26-item checklist.

The authors did not state how many reviewers assessed study quality.

Data extraction
The authors stated neither how the data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
A narrative synthesis was provided, supported by tables. Differences between the studies were discussed in the text.

Results of the review
Thirty-five studies were included in the review (at least 24,050 participants, range 24 to 5,106) comprising 14 RCTs, 12 pilot studies, eight non-randomised controlled trials, and one non-controlled trial. Five of the 14 RCTs met at least
18 of the CONSORT checklist items.

**Face-to-face educational programs or parent training** (six studies): Three studies reported mixed effects and three reported no effect on children's physical activity.

**Family participatory exercise programs** (six studies): One study reported a positive effect on children's physical activity, one had mixed effects, three had no effect and one had a negative effect.

**Telephone communication** (three studies): One study reported mixed effects on children's physical activity, one reported mixed effects for boys and no effect for girls, and one study in girls reported no effect.

**Organised activities** (nine studies): Two studies reported a positive effect on children's physical activity, two had mixed effects, four had no effect and in one study the physical activity results were unclear.

**Educational materials sent home** (11 studies): One study reported a positive effect on children's physical activity, one had mixed effects, eight had no effect and in one study the physical activity results were unclear.

**Authors' conclusions**
Due to the heterogeneity of study design, study quality and outcome measures used, there was little evidence for effectiveness of family involvement methods in programmes that promoted physical activity in children. There was a need to build an evidence base of more-predictive models of child physical activity that included parent and child mediating variables and procedures that can effect changes in these variables for future family-based physical activity interventions.

**CRD commentary**
The review question and inclusion criteria were clear. The search strategy appeared to consult some relevant sources, but the restriction to articles published in English may have meant that studies were missed; language and publication biases could not be ruled out. There was insufficient information about the study selection, validity assessment and data extraction processes to rule out the possibility of error and bias.

Appropriate criteria were used to assess the quality of the RCTs; most were of poor quality. The decision not to statistically pool results was appropriate given the lack of uniformity in reporting trials, multiple pilot studies, and varied measurements of physical activity outcomes.

The authors’ conclusions reflect the evidence presented, but in light of the shortcomings highlighted for the review process, limitations in study design for most of the studies and poor quality of the included randomised studies, the conclusions should be interpreted with caution.

**Implications of the review for practice and research**
**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that there was a need to build an evidence base of more-predictive models of child physical activity that included parent and child mediating variables and procedures that can effect changes in these variables for future family-based physical activity interventions.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.