CRD summary
This review found that interventions aimed at both parents and children had a significant effect on children’s physical activity, but not on their body mass index. The conclusions reflect the evidence presented, but methodological and reporting issues limit the usefulness of the review for decision-makers.

Authors' objectives
To assess the effects of interventions for parents and children, on the children's physical activity and body mass index (BMI).

Searching
Various databases, including MEDLINE, were searched, using ProQuest, for articles from 1990 to 2011. Dissertations and theses were sought through ProQuest. The search was restricted to English-language studies. Some search terms were reported.

Study selection
Controlled studies of interventions for parents, children or families, to improve children's physical activity or BMI, were eligible for inclusion. Studies not reporting sufficient data for the meta-analyses were excluded.

The included studies varied widely in participant age, gender and ethnicity. Six broad types of intervention were used, including education, physical activity and diet, in various combinations. Most studies did not specify whether participants were overweight. Interventions lasted from two days to four years. Studies were performed in the USA or various other mainly high-income countries; one was performed in the UK.

Two reviewers selected studies for inclusion.

Assessment of study quality
Study quality was assessed, based on the presence of a control group, objective measurement of outcomes, clarity of outcome definitions, and reporting of the number of withdrawals and reasons for withdrawal. It appears that quality scores ranging from 3 (minimum for controlled studies) to 6 were assigned, but these scores were not reported.

Two reviewers independently assessed quality; disagreements were resolved by reassessment and consensus.

Data extraction
The differences, after intervention, between the treatment and control groups, were used to calculate the effect size (MD) for each study.

It seems that two reviewers independently extracted the data; disagreements were resolved by reassessment and consensus.

Methods of synthesis
The data were pooled by random-effects meta-analysis to derive a pooled mean difference and its 95% confidence interval.

Subgroup analyses were performed for studies involving parents and children or families, and for those where the intervention involved children only, for each outcome. Heterogeneity was assessed using Cochran's Q. Publication bias was assessed using a funnel plot.

Results of the review
Twenty-one studies with 7,003 participants (range 15 to 1,654) were included; sixteen were randomised trials with a
control or comparison group.

Across all studies and both outcomes, the interventions had no effect on physical activity and BMI (MD 0.04, 95% CI -2.04 to 2.13).

In subgroup analyses, for interventions aimed at parents and children or families, there was a statistically significant effect for physical activity (MD 0.29, 95% CI 0.09 to 0.48), but not BMI (MD -0.09, 95% CI -0.37 to 0.19). For interventions with children only, there was a significant effect on BMI (MD -0.08, 95% CI -0.16 to -0.01), but no effect on physical activity (MD 0.06, 95% CI -0.08 to 0.20).

There was no evidence of significant publication bias.

**Authors' conclusions**
Interventions aimed at both parents and children had a significant effect on physical activity, but not on BMI.

**CRD commentary**
The stated objective was to assess interventions involving parents and children, but interventions involving children only were also included. The results for interventions with parents and children were reported as a subgroup analysis and it was unclear whether this was specified in advance.

The search covered a range of relevant sources; language restrictions meant that some relevant studies could have been omitted. Appropriate methods were used to minimise errors and bias in the review process. Study quality was assessed and the results were used in the analysis. The meta-analyses used standard methods, but there was limited reporting of heterogeneity and the effect sizes were small, making the clinical significance of the results difficult to interpret. The authors noted that their review provided little guidance as to which type of intervention might be most effective.

The authors' conclusions reflect the evidence presented, but methodological and reporting issues limit the usefulness of the review for decision-makers.

**Implications of the review for practice and research**

**Practice:** The authors stated that attention should be given to involving parents in their children's physical activity programmes.

**Research:** The authors stated that there was a need to develop and evaluate exercise programmes for children to use together with their parents.

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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.