Unassisted pelvic floor exercises for postnatal women: a systematic review

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CRD summary
The authors concluded that unassisted pelvic floor exercises may be effective in reducing postnatal incontinence in the short term, but the effects may not be maintained over time. Although the review was well-conducted in most respects, it included both treatment and prevention studies and a wide range of interventions, which makes it difficult to determine the applicability of the conclusions.

Authors' objectives
To evaluate the effectiveness of unassisted pelvic floor exercises for the treatment and prevention of stress urinary incontinence in postnatal women.

Searching
MEDLINE, CINAHL, the British Nursing Index, EMBASE, PsycINFO, ProQuest Medical Library, ProQuest Nursing Journals, ProQuest Psychology Journals, the Cochrane CENTRAL Register, the Cochrane Incontinence Group's Specialised Register, DARE, Clinical Evidence and SIGLE were searched from inception to 2006; the search terms were provided. The proceedings of international continence society conferences, selected textbooks and other publications were searched, as were the reference lists of articles retrieved. The Continence Foundation and other experts in the field were contacted. The search was restricted to articles published in English.

Study selection
Randomised controlled trials (RCTs) comparing unassisted pelvic floor exercises with usual care were eligible for inclusion. 'Unassisted' was defined as needing no equipment. The intervention comprised either an intensive and/or personally tailored exercise programme, or home visits to provide relevant instruction. Some programmes included other measures to improve compliance, such as reminders, an exercise diary, educational material and posters. Usual care varied from simple leaflets to group exercise or instruction sessions. The exercise programmes and control interventions were delivered over 5 to 6 days (where stated), while home visits occurred three times over 9 months. The duration of follow-up ranged from 3 months to 6 years. Studies were held in primary care, hospital, community and maternity care settings and were led by midwives, physiotherapists or nurses. RCTs were excluded if there were methodological problems such as unequal groups at baseline, or if results were available for only one study arm. Studies of postnatal women were eligible for inclusion. The review included studies of women with or without symptoms of incontinence. Where stated, the mean age of the participants was 26 to 29 years (age range: 15 to 44). To be eligible for inclusion, studies had to report symptoms of incontinence, pelvic muscle strength, patient satisfaction and/or quality of life.

The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The following factors were considered when assessing studies for risk of bias: allocation concealment, intention-to-treat analysis, losses to follow-up, blinding of the outcome assessment, sample size and whether a power calculation was reported.

The authors did not state how many reviewers performed the validity assessment.

Data extraction
Two authors independently extracted the data. It was not stated how any disagreements were resolved. Attempts were made to contact authors where data were missing.

Methods of synthesis
The study findings were summarised in a table and combined in a narrative. Clinical and methodological heterogeneity were discussed in the text.

**Results of the review**

Four RCTs (n=3,295) were included.

Three RCTs reported adequate allocation concealment, blinded assessment of the primary outcome, use of intention-to-treat analysis and calculation of power. Loss to follow-up was variable (6, 11, 29 and 36%). There was marked heterogeneity in the type and intensity of interventions in both groups, and also in outcome measures. Only two studies used validated measurement tools.

One RCT (n=676) reported a statistically significant reduction in severe incontinence in the intervention group at 3 months (response rate, RR 0.60, 95% confidence interval, CI: 0.40, 0.89), but no statistically significant effect at 12 months. A second RCT (n=747), in which all participants had incontinence, reported a statistically significant reduction in both incontinence and severe incontinence in the intervention group at 12 months (RR 0.87, 95% CI: 0.76, 0.99 and RR 0.62, 95% CI: 0.46, 0.84, respectively), but no significant difference between the groups at 6 years. Three quarters of women incontinent at baseline remained so at 6 years. The third RCT found a statistically significant reduction in severity of incontinence in the intervention group at 6 weeks, as measured by the urinary continence symptom score (mean difference -0.38, 95% CI: -0.72, -0.04), but no significant ongoing difference over the 12-month follow-up. The fourth RCT reported no statistically significant difference between the groups.

No statistically significant increase in pelvic muscle strength was reported over 6 months' follow-up (one RCT, n=72).

No statistically significant difference between the intervention and control groups was found for depression or general well-being. Hospital Anxiety and Depression Scale anxiety scores were lower in the intervention group at 12 months in one RCT (statistical significance not stated, n=747) and depression was reported significantly less frequently (p<0.05) in the intervention group in another RCT (n=1,800).

Three RCTs (n=1,495) reported that intervention group members were more likely to continue exercise than control group members at initial follow-up (58 to 100% and 42 to 66%, respectively). The numbers exercising declined over time and the RCT with the 6-year follow-up reported that equal numbers in each group (50%) were doing pelvic floor exercises at that stage.

**Authors' conclusions**

Unassisted pelvic floor exercises may be effective in reducing the risk of postnatal incontinence in the short term, but the effects may not be maintained over time.

**CRD commentary**

The review objectives and inclusion criteria were clear in most respects, although the rationale for excluding five RCTs (e.g. for methodological reasons) was not explained in detail. The search was thorough apart from the language restriction, which means that some data might have been missed. Appropriate criteria were used to evaluate the risk of bias in the primary studies. Two reviewers independently extracted the data and assessed study quality, but it was unclear whether similar steps were taken to minimise bias and error when selecting the studies; it was also unclear how any discrepancies between reviewers were resolved. Given the heterogeneity between the studies it was appropriate that the authors did not pool the data statistically, and several differences between the studies were addressed in the text. However, the narrative synthesis combined treatment studies with prevention studies, without discussing how the different populations in these studies might influence the findings. The wide variation in interventions and follow-up times in these studies also makes it difficult to interpret the findings. Although the review was well-conducted in most respects, the heterogeneity of the primary studies makes it difficult to determine the applicability of the authors' conclusions.

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

Practice: The authors did not state any implications for practice.

Research: The authors stated that more research is required to determine the effectiveness of unassisted pelvic floor
exercises and to establish the best setting for providing this intervention. Standardised interventions and outcomes measures and patient-relevant outcomes such as quality of life should be used. Follow-up should be long enough to permit an evaluation of long-term effectiveness.

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