Biofeedback therapy in fecal incontinence and constipation
Enck P, van der Voort IR, Klosterhalfen S

CRD summary
The authors concluded that there was evidence of a substantial therapeutic effect of biofeedback therapy for constipation due to pelvic floor dyssynergia, but lack of evidence for biofeedback therapy for incontinence. There were a number of limitations to this review. In particular, the review did not report data specific to pelvic floor dyssynergia, so these conclusions may not be reliable.

Authors' objectives
To evaluate the efficacy of biofeedback therapy for the treatment of constipation and faecal incontinence.

Searching
PubMed was searched for studies published in English between 1980 and 2008; search terms were reported. In addition, reference lists in identified articles, reviews and meta-analyses were screened.

Study selection
Randomised controlled trials (RCTs) that evaluated biofeedback therapy in adults with constipation or incontinence were included.

The included trials compared basic biofeedback therapy (electromyographic or pressure biofeedback) with a variety of control treatments including: additional electrical stimulation; additional home training; balloon pressure; pelvic floor exercises, sensory training, electrical stimulation; verbal feedback; laxatives; placebo or sham feedback; Botox injection; and treatment as usual. Where stated, the number of treatment sessions ranged from one to 12. Where reported, patients ranged in age from eight to 92 years. Most patients were female. Outcomes were assessed using subjective global assessments, diaries, or questionnaires but no further details of outcome measures were reported.

Two reviewers independently selected studies. Disagreements appeared to be resolved with the aid of a third reviewer.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
Data for the primary outcome were reported as being extracted from each trial as the number of patients who benefited from the intervention or the average change per treatment arm. Only odds ratios (ORs) appeared to be reported in the review.

Two reviewers independently extracted data. Disagreements were resolved with the aid of a third reviewer.

Methods of synthesis
Studies were grouped by medical condition (constipation or incontinence) and type of control. Pooled odds ratios and 95% confidence intervals (CI) were calculated using a fixed-effect model.

Results of the review
Nineteen RCTs were included (n=1,039 patients). Sample size ranged from eight to 171 patients. Where reported, the duration of follow-up ranged from none up to two years.

Incontinence (eleven RCTs, n=586 patients): There was no statistically significant difference between basic biofeedback therapy and other modes of biofeedback therapy (five RCTs that compared electromyographic or pressure biofeedback versus additional electrical stimulation or home training and balloon pressure), or between biofeedback...
therapy and other modes of biofeedback therapy (six studies that compared electromyographic or pressure biofeedback versus pelvic floor exercises, sensory training, electrical stimulation and treatment as usual).

**Constipation** (eight RCTs, n=454 patients): There was no statistically significant difference between basic biofeedback therapy and other modes of biofeedback therapy (four studies that compared electromyographic biofeedback versus pressure and balloon biofeedback, verbal feedback and additional modes of biofeedback).

Biofeedback therapy was associated with a statistically significantly superior subjective global effect compared with non-biofeedback therapy (including laxatives, placebo, sham feedback and botulinum toxin injection), odds ratio 3.657 (95% CI 2.127 to 6.290; four RCTs).

**Authors’ conclusions**

There was evidence of a substantial therapeutic effect of biofeedback therapy for constipation due to pelvic floor dyssynergia, but a lack of evidence for biofeedback therapy for incontinence.

**CRD commentary**

The review question was clearly stated. Inclusion criteria for study design, intervention and participants were evident from a combination of information in the text and the abstract of the review. Criteria for outcomes were not stated. Limiting the search to English-language publications identified in one database plus references raised the potential for publication and language bias, and may have resulted in the omission of other relevant studies. Methods were used to minimise reviewer errors and bias in the selection of studies and extraction of data.

Only RCTs were included in the review, but study validity was not assessed, so results from these trials, and any synthesis, may not be reliable. No details were reported of the medical conditions underlying the constipation or incontinence of patients, so the generalisability of findings could not be judged. Data were pooled using meta-analysis. The diversity of control groups, lack of assessment of statistical heterogeneity, and lack of information about measures used to assess outcomes in individual studies, meant it was unclear whether studies were sufficiently statistically and clinically homogeneous for meta-analysis to be appropriate. In addition, it was not clear what outcome the reported odds ratios referred to.

The authors’ conclusions refer to the positive effects of biofeedback therapy on pelvic floor dyssynergia, but findings for this patient group were not reported in the review and cannot be verified. In addition, lack of assessment of study quality, the limited search, limited information about patients and outcome measures, and diversity among trials, mean that the conclusions may not be reliable.

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

The authors did not state any implications for practice or research.

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contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on
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