Relaxation therapies for asthma: a systematic review

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Authors' objectives

To determine the effectiveness of relaxation therapies in the treatment of asthma.

Searching

MEDLINE, the Cochrane Library, CISCOM and EMBASE were all searched from their inception to December 1999. The bibliographies of the retrieved papers were examined for further articles. The reviewers' own database on complementary medicine was also searched. The search terms used were: 'asthma', 'relaxation therapy', 'autogenic', 'biofeedback', 'hypnosis' and 'meditation'. Studies published in any language were considered.

Study selection

Study designs of evaluations included in the review

The review only included randomised controlled trials (RCTs; parallel or crossover design).

Specific interventions included in the review

Studies were included if the relaxation therapy involved regular self practice of a psychophysiological technique, which promotes primarily physical or mental relaxation without suggestion or repetition of phrases aimed at a specific effect on asthma. The interventions included in the review were: progressive muscle relaxation, mental and muscular relaxation, hypnotherapy, autogenic training, biofeedback training and transcendental meditation. The interventions based on yoga and breathing techniques were excluded as they had been described elsewhere.

Participants included in the review

Asthma. Studies were included if they defined asthmatic patients by American Thoracic Society (ATS) criteria or specified reversible airway constriction. Any studies involving experimentally-induced asthma, or patients suffering from other medical conditions in addition to their asthma, were excluded. Some studies focused on children, others on adults, and the remainder were mixed groups.

Outcomes assessed in the review

The inclusion criteria relating to the outcomes were not specified. The outcome measures included lung function parameters, symptom diaries, medication usage and asthma events. Lung function tests included the airway resistance, forced expiratory volume in 1 second and peak expiratory flow rate; the latter two are commonly used despite known limitations. A change in lung function of 15% or more was considered clinically relevant. Asthma events included unscheduled visits to doctors, prescriptions of antibiotics or prednisolone, and days missed from school or work.

How were decisions on the relevance of primary studies made?

The studies were included by agreement between two reviewers.

Assessment of study quality

The quality of the included studies was assessed using the scale of Jadad et al. (see Other Publications of Related Interest). It was unclear how many of the reviewers performed the quality assessment.

Data extraction

All studies that met the criteria were read in full. The data were extracted by two independent reviewers using specially designed data forms, and any discrepancies were resolved by discussion. The data extracted included: participant numbers and age ranges; study design features; treatment and control regimens; details of drop-outs and withdrawals; quality score; outcome measures; and results.

Methods of synthesis

How were the studies combined?

The studies were combined in a narrative summary, grouped by relaxation technique.

How were differences between studies investigated?

The studies were grouped according to relaxation technique and discussed separately.

Results of the review

Nine of the 15 identified studies fulfilled the criteria for comparing the treatment group statistically with the control group. These 9 studies were RCTs, with a combined total of 536 participants. The remaining 6 studies were described within the text with a discussion on their inadequate analysis.

Of the 9 studies that had an appropriate comparison with a control group, just one scored 3 on the Jadad quality scale; the remaining studies scored 2 (5 studies) or 1 (3 studies).

Two of the 5 RCTs testing progressive muscle relaxation or mental and muscular relaxation showed significant effects of therapy. One RCT investigating hypnotherapy, one of autogenic training and 2 of biofeedback techniques, revealed no therapeutic effects.

Authors' conclusions

There was a lack of evidence for the efficacy of relaxation therapies in the management of asthma. The authors conclude, however, that there was some evidence that muscular relaxation improves lung function of patients with asthma.

CRD commentary

The reviewers used clear inclusion criteria in terms of the study design and participants. The criteria for outcome measures were not described, but those included appear to have been appropriate. The inclusion criteria relating to the intervention were somewhat problematic in that two of the interventions (hypnotherapy and autogenic training) were not purely relaxation techniques. It is possible that these therapies could affect asthma symptoms in ways other than promoting relaxation and would, therefore, be best reviewed separately from the pure relaxation techniques.

The reviewers' search strategy appears to have been thorough, using a range of databases and information sources with no language restrictions. However, no attempt was made to look for unpublished material. Two reviewers were involved in selecting and extracting data from the studies. The included studies were quality assessed using a published checklist, and the reviewers highlighted the methodological problems associated with many of the studies. The reviewers used a narrative summary to synthesise the evidence, which was appropriate due to the heterogeneity in the design of the studies.

The reviewers' conclusions and criticisms of the evidence are appropriate. However, the fact that there is a lack of evidence for the efficacy of relaxation techniques in asthma should not be taken to mean that such techniques are ineffective. The included studies were generally of a poor quality and were often underpowered to detect an effect, particularly when compared with an active (and sometimes inappropriate) control.

In summary, this review highlights the lack of good quality evidence in this area and points to the need for better designed studies.

Implications of the review for practice and research

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

Research: The authors state that muscular relaxation techniques may warrant further investigation for the improvement of lung function in asthma patients.

Funding
Boots the Chemist.

Bibliographic details
Huntley A, White A R, Ernst E. Relaxation therapies for asthma: a systematic review. Thorax 2002; 57(2): 127-131

PubMedID
11828041

Original Paper URL
http://thorax.bmjjournals.com/cgi/content/full/57/2/127

Other publications of related interest
Jadad AR, Moore RA, Carroll D, Jenkinson C, Reynolds DJ, Gavaghan DJ, et al. Assessing the quality of reports of randomized clinical trials: is blinding necessary? Control Clin Trials 1996;17:1-12.

Indexing Status
Subject indexing assigned by NLM

MeSH
Anxiety /therapy; Asthma /psychology /therapy; Biofeedback, Psychology /methods; Humans; Hypnosis /methods; Meditation /methods; Randomized Controlled Trials as Topic; Relaxation Therapy; Stress, Psychological /complications /therapy

AccessionNumber
12002000493

Date bibliographic record published
31/01/2003

Date abstract record published
31/01/2003

Record Status
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.