



BTS/ACPRC Guideline Physiotherapy management of the adult, medical, spontaneously breathing patient Web Appendix 1

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Introduction

Complementary therapy and alternative medicine are terms used to describe treatments outside the usual medical remit. Such modalities may promote physical fitness, relaxation, improve posture and/or encourage good breathing technique. Some of the commonest therapies described as complementary include Pilates, the Alexander Technique, massage, aromatherapy, acupuncture or acupressure, Yoga, Tai Chi and the Buteyko Breathing Technique. Since studies of the latter have used physiotherapy as the control condition, this technique is discussed in the main document in section 2, 'Asthma and Disordered Breathing'.

Many physiotherapists have an interest in these complementary therapies since a good proportion of them are modelled on, or mirror, the traditional physiotherapeutic modalities of exercise, posture correction, breathing retraining, therapeutic touch and massage, and relaxation. Indeed, massage was part of the physiotherapy armoury until the 1980s, but fell out of favour, mainly due to lack of time and staffing.

Physiotherapists increasingly now use complementary therapies as part of their clinical practice, with massage, aromatherapy and acupuncture or acupressure, with or without transcutaneous electrical stimulation (TENS), being the techniques most likely to be used.

There are few data relating to these treatments and it is beyond the scope of these guidelines to provide a systematic review of the literature for all these therapies in all conditions, but there is generally insufficient evidence to support or refute the use of complementary therapies for patients with lung disease.

Acupuncture

Acupuncture is the most commonly used of the complementary therapies, mainly to alleviate pain [1], and is used by physiotherapists in the management of musculoskeletal problems. One study [2] reported good short term outcome for pain relief with acupuncture in cystic fibrosis, but there are no long term data. It has the potential for use in painful conditions such as mesothelioma. Acupuncture is also said to help with nausea, anxiety, dyspnoea and a variety of other symptoms.

Level of evidence 4

Recommendation

- **Acupuncture may be considered in the management of pain for people with pulmonary conditions. (Grade D)**

Research recommendation

- **Further research is required to assess the effect of acupuncture on pain, shortness of breath, nausea and anxiety in people with pulmonary conditions.**

Relaxation, Massage and Aromatherapy

These are techniques designed to alleviate anxiety, induce relaxation and promote feelings of wellbeing. A randomised controlled trial (RCT) in general practice (n=69) [3] compared the effect of therapeutic massage with the use of a relaxation tape, either in the surgery or at home, on patients' perception of stress. There were significant improvements in emotional disturbance and sleep, with fewer GP consultations. Although there was

very strong patient preference for therapeutic massage, it did not show any greater benefit. Massage is generally now only commonly offered to cancer sufferers or those in end-of-life care.

A 2004 Cochrane review [4] concludes that massage and aromatherapy massage confer short-term benefits on psychological wellbeing in patients with cancer, but that further research is required. A 2007 randomised controlled trial [5] on the effectiveness of supplementing usual supportive care with aromatherapy massage in the management of anxiety and depression in cancer patients, found that aromatherapy massage was associated with clinically important benefit up to 2 weeks after the intervention but appeared to confer no benefit in the long-term.

In a crossover RCT [6], therapeutic massage (MT) and healing touch (HT) were compared with simply 'presence' or standard care, in inducing relaxation and reducing symptoms in 230 subjects receiving cancer chemotherapy. 'Presence', MT and HT reduced both respiratory and heart rates. In addition, MT reduced anxiety and non-steroidal anti-inflammatory drug use; HT reduced fatigue; both MT and HT lowered total mood disturbance, pain ratings and blood pressure.

No evidence could be found on the use of these techniques in patients with pulmonary conditions.

Level of evidence 1–

Good practice points

- **Massage and aromatherapy massage may be considered for patients who are anxious, short of breath or in the terminal stages of life.**
- **Relaxation may be considered for the relief of stress.**

Research recommendation

- **Further research is required to assess the effect of massage, aromatherapy and relaxation on anxiety, pain, stress or shortness of breath in people with pulmonary conditions.**

Pilates

This approach to exercise is based on a series of carefully controlled movements that seeks to develop body awareness and 'core' muscle strength. It also incorporates controlled breathing in time with the exercises. Pilates is said to improve body posture, tone, strength and flexibility by using a holistic approach to exercising. The principle of Pilates (building core strength) has been used in conventional physiotherapy for decades. Many physiotherapists currently use and teach Pilates in their own clinical practice as developing a strong 'core' is useful in many conditions, such as back pain and in neurological conditions, and could well have a beneficial role in respiratory conditions.

No publications, however, were found on this technique in chronic pulmonary disorders.

Level of evidence unavailable

Good practice point

- **Pilates (core strengthening) may be considered in the management of individuals with chronic lung conditions, especially those with weak core muscles.**

Research recommendation

- **Research is required to evaluate the effectiveness of Pilates in the treatment of people with chronic pulmonary conditions.**

Alexander Technique

This technique teaches appropriate ways of standing, sitting and moving that are said to reduce tension and strain within muscle groups. The technique is said to provide a useful approach to poor posture, stress, back and neck pain and also to improve breathing technique and thus reduce anxiety. No publications were found on this technique in chronic pulmonary disorders.

Level of evidence unavailable

Good practice point

- **The Alexander Technique may be considered in the management of individuals with chronic lung conditions, especially those who may be interested in alternative or complementary therapies.**

Research recommendation

- **Research is required to evaluate effectiveness of the Alexander Technique in the treatment of people with chronic pulmonary conditions.**

Tai Chi

Founded by a 13th century Taoists monk Tai Chi (Qigong) is said to improve cardiovascular, musculoskeletal, and respiratory function. This form of Chinese martial arts consists of a succession of slow controlled movements and postures reflecting those of birds and animals. Tai Chi also uses slow controlled breathing with the movements.

A 2008 meta-analysis of this technique concluded that Tai Chi exercise is effective in improving aerobic capacity when practiced long term, with greater gains seen among those initially sedentary or more than 55 years old [7]. An unpublished abstract of a small randomised controlled trial found Tai Chi compared favourably with conventional exercises when used in conjunction with aerobic training in pulmonary rehabilitation [8].

Patient representatives have advocated this technique but there is insufficient evidence to support or refute its use in patients with chronic lung diseases.

Level of evidence 1–

Research recommendation

- **Research is required to evaluate the effectiveness of Tai Chi in the management of people with chronic pulmonary conditions.**

Complementary Therapy for Asthma

This section will focus almost exclusively on the evidence for complementary therapies in asthma, since it was patient representatives from this group who highlighted the importance of these techniques to their self-management.

Many asthmatics, including patient representatives for these guidelines, report the benefit of therapies that incorporate relaxed, slow breathing techniques emphasising expiration and slow, controlled exercises, e.g. yoga or Tai Chi. This published evidence for yoga, relaxation and acupuncture/acupressure in asthma is reviewed here. Recommendations for consideration of these techniques are especially valid for those who may be interested in alternative or complementary therapies.

Level of evidence 4

Yoga

Several studies report benefit from yoga in asthma, although numbers in these studies are small. One [9] included breathing techniques and reported decreased bronchial hyper-reactivity and improved emotional stability. Jain [10] found significant improvements in pulmonary function and exercise ability, but as there was no control group, these results should be regarded with caution. A third [11] also reported a decrease in the use of inhaled medications and enhanced mood, but in contrast to Jain [10] no improvement in lung function. Manocha [12] found improvements in airway hyper-responsiveness and mood following the introduction of yoga, with the effect lasting up to two months. No improvements in lung function were found. Singh et al [13] reported a reduction in airway responsiveness to histamine inhalation following pranayama breathing. The authors concluded that the usefulness of controlled ventilation exercises in the control of asthma should be further investigated.

Level of evidence 1+

Recommendation

- **The components of yoga may be considered in the management of patients with asthma. (Grade C)**

Research recommendations

- **Further research is required to ascertain the clinical relevance of yoga (including breathing techniques) in the management of asthma.**
- **Research is required to ascertain the clinical relevance of yoga (including breathing techniques) in the management of disordered breathing and other pulmonary conditions.**

Relaxation therapies

Discussion of the use of relaxation therapy for stress is discussed earlier in this document under 'relaxation, massage and aromatherapy'.

Three reviews have attempted to quantify the effect of relaxation therapies in the treatment of asthma [14–16]. They included the following techniques: progressive muscle relaxation, mental relaxation, systematic desensitisation and electromyography (EMG) biofeedback-assisted relaxation, music based relaxation, functional relaxation, autogenic training, yoga, breathing relaxation, hypnotic suggestion of relaxation and transcendental meditation.

In an early review [14] no clear outcome measures were identified; however, relaxation therapy was found to produce subjective and clinically significant improvements in respiratory function and other parameters such as airway resistance. A 2001 review, [15] used indices of spirometry and airway resistance to compare papers and concluded there was neither convincing benefit of relaxation for asthmatic adults as individual treatments, nor as part of multi-component treatment packages in terms of pulmonary function change. Outcome measures used in the trials included in the 2002 review [16] were: lung function; symptom diaries; medication usage and asthma events. The authors conclude that there was a lack of good quality evidence on which to assess the efficiency of relaxation therapies. They state that there was some evidence to suggest muscular relaxation may provide some improvements in lung function [17, 18]. One trial [19] compared the efficacy of 'functional relaxation' to Terbutaline and a 'placebo relaxation' method, in patients with acute asthma. The results showed that relaxation reduced small airway resistance and the authors concluded that clinically relevant effects could be achieved in patients with asthma through 'mind-body' interaction.

There is insufficient evidence to support or refute the use of relaxation therapies in the management of asthma. However, many asthmatics report the benefit of relaxation therapy. Moreover, it is hard to separate the

techniques of relaxation and breathing retraining, since the latter used for this condition invariably includes relaxation.

The evidence for breathing retraining in asthma is reviewed in the main guideline document in section 2, 'asthma and disordered breathing'.

Level of evidence 1–

Research recommendations

- **Further research is required in the evaluation of relaxation therapies in the treatment of asthma.**
- **Further research is required in the evaluation of relaxation therapies in the treatment of disordered breathing and other pulmonary conditions.**

Acupuncture and Transcutaneous Electrical Nerve Stimulation

Despite the large numbers of papers available on acupuncture, few are of high quality. Two studies [20, 21] found no significant change in any outcome measures. Medici however, did find a positive effect on eosinophilic inflammation. Several systematic reviews [22-25], [26] could neither support nor reject the use of acupuncture in asthma, due to the lack of high quality papers available for review and the wide variety of methodologies used in published studies. One study [27] investigated the use of transcutaneous electrical nerve stimulation (TENS) at acupuncture points and found improvements with both placebo TENS and active TENS. They concluded that the acute bronchodilation obtained was probably psychogenic. Of note, however, the authors do not state whether placebo TENS involved the application of pressure, so it is impossible to exclude that the effects could have been due to acupressure.

There is insufficient evidence to support or refute the use of acupuncture, acupressure or Transcutaneous Electrical Nerve Stimulation in the management of asthma. However, many asthmatics report the benefit of acupuncture/ acupressure, with or without Transcutaneous Electrical Nerve Stimulation.

Level of evidence 2-

Good practice point

- **Acupuncture/acupressure, with or without Transcutaneous Electrical Nerve Stimulation may be considered in the management of patients with asthma.**

Research recommendation

- **Further research is required in the evaluation of acupuncture/acupressure in the treatment of asthma.**

Reference List

1. Baldry P. The integration of acupuncture within medicine in the UK--the British Medical Acupuncture Society's 25th anniversary. *Acupunct Med* 2005;**23**:2-12.
2. Lin YC, Ly H, Golianu B. Acupuncture pain management for patients with cystic fibrosis: a pilot study. *Am J Chin Med* 2005;**33**:151-156.
3. Hanley J, Stirling P, Brown C. Randomised controlled trial of therapeutic massage in the management of stress. *Br J Gen Pract* 2003;**53**:20-25.
4. Fellowes D, Barnes K, Wilkinson S. Aromatherapy and massage for symptom relief in patients with cancer. *Cochrane Database of Systematic Reviews* 2004;**Issue 3. Art No: CD002287. DOI: 10.1002/14651858.CD002287.pub2.**
5. Wilkinson SM, Love SB, Westcombe AM et al. Effectiveness of aromatherapy massage in the management of anxiety and depression in patients with cancer: a multicenter randomized controlled trial. *J Clin Oncol* 2007;**25**:532-539.
6. Post-White J, Kinney ME, Savik K et al. Therapeutic massage and healing touch improve symptoms in cancer. *Integrative Cancer Therapies* 2003;**2**:332-344.
7. Taylor-Piliae RE. The effectiveness of Tai Chi exercise in improving aerobic capacity: an updated meta-analysis. *Medicine & Sport Science* 2008;**52**:40-53.
8. Price A, O'Shaughnessy T, Meah M. A pilot study to compare qigong exercises with conventional exercises in pulmonary rehabilitation. *Thorax* 2006;**61**:ii67.
9. Nagarathna R, Nagendra HR. Yoga for bronchial asthma: a controlled study. *British Medical Journal Clinical Research Ed* 1985;**291**:1077-1079.
10. Jain SC, Rai L, Valecha A et al. Effect of yoga training on exercise tolerance in adolescents with childhood asthma. *J Asthma* 1991;**28**:437-442.
11. Vedanthan PK, Kesavalu LN, Murthy KC et al. Clinical study of yoga techniques in university students with asthma: a controlled study. *Allergy & Asthma Proceedings* 1998;**19**:3-9.
12. Manocha R, Marks GB, Kenchington P et al. Sahaja yoga in the management of moderate to severe asthma: a randomised controlled trial. *Thorax* 2002;**57**:110-115.
13. Singh V, Wisniewski A, Britton J et al. Effect of yoga breathing exercises (pranayama) on airway reactivity in subjects with asthma. *Lancet* 1990;**335**:1381-1383.
14. Erskine-Milliss J, Schonell M. Relaxation therapy in asthma: a critical review. *Psychosom Med* 1981;**43**:365-372.
15. Ritz T. Relaxation therapy in adult asthma. Is there new evidence for its effectiveness?. [Review] [80 refs]. *Behav Modif* 2001;**25**:640-666.
16. Huntley A, White AR, Ernst E. Relaxation therapies for asthma: a systematic review. *Thorax* 2002;**57**:127-131.
17. Alexander AB, Miklich D, Hershkoff H. The immediate effects of systematic relaxation training on peak expiratory flow rates in asthmatic children. *Psychosom Med* 1972;**34**:388-394.
18. Hock RA, Bramble J, Kennard DW. A comparison between relaxation and assertive training with asthmatic male children. *Biol Psychiatry* 1977;**12**:593-596.
19. Loew TH, Tritt K, Siegfried W et al. Efficacy of 'functional relaxation' in comparison to terbutaline and a 'placebo relaxation' method in patients with acute asthma. A randomized, prospective, placebo-controlled, crossover experimental investigation. *Psychotherapy & Psychosomatics* 2001;**70**:151-157.
20. Medici TC, Grebski E, Wu J et al. Acupuncture and Bronchial Asthma: A Long-Term Randomized Study of the Effects of Real Versus Sham Acupuncture Compared to Controls in Patients with Bronchial Asthma. *The Journal of Alternative and Complementary Medicine* 2002;**8**:737-750.
21. Shapira MY, Berkman N, Ben-David G et al. Short-term acupuncture therapy is of no benefit in patients with moderate persistent asthma. *Chest* 2002;**121**:1396-1400.
22. Linde K, Worku F, Stor W et al. Randomised clinical trials of acupuncture for asthma – a systematic review. *Forsch Komplementarmed* 1996;**3**:148-155.
23. McCarney RW, Lasserson TJ, Linde K et al. An overview of two Cochrane systematic reviews of complementary treatments for chronic asthma: acupuncture and homeopathy. *Respir Med* 2004;**98**:687-696.
24. Kleijnen J, ter Riet G, Knipschild P. Acupuncture and asthma: a review of controlled trials. *Thorax* 1991;**46**:799-802.
25. Martin J, Donaldson AN, Villarreal R et al. Efficacy of acupuncture in asthma: systematic review and meta-analysis of published data from 11 randomised controlled trials. *Eur Respir J* 2002;**20**:846-852.
26. McCarney RW, Brinkhaus B, Lasserson TJ et al. Acupuncture for chronic asthma. *Cochrane Database of Systematic Reviews* 2003;**Issue 3. Art. No.: CD000008. DOI: 10.1002/14651858.CD000008.pub2.**
27. Sovijarvi AR, Poppius H. Acute bronchodilating effect of transcutaneous nerve stimulation in asthma. A peripheral reflex or psychogenic response. *Scand J Respir Dis* 1977;**58**:164-169.