



# An integrative approach to asthma



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## BACKGROUND

Conventional asthma management has provided significant symptomatic relief for asthma sufferers, as well as having saved the lives of many asthma patients. However, many patients with asthma – and the parents of children with asthma – are increasingly seeking to improve asthma control and quality of life, and reduce medication dosage by using an integrative medicine (IM) approach to their asthma management. This approach incorporates lifestyle interventions, psychological approaches, and complementary therapies.

## OBJECTIVE

This article reviews some of the evidence for the IM approach to asthma including complementary medicine (CM), lifestyle and mind-body strategies; and discusses some of the practical and safety issues involved.

## DISCUSSION

Many patients report significant benefits from broadening their approach to asthma, but there is also the potential risk of some patients to make unsafe treatment choices and possibly forgo adequate supervision. Unfortunately, many patients do not inform their general practitioner about their use of CM. Medical education has not traditionally trained doctors to be aware of evidence based lifestyle and CM treatment options. The informed GP plays a vital role in supervision, educating patients about valid and safe treatment options, decision making, and supporting legitimate patient empowerment in their own management. An evidence based integrative approach offers the best potential outcomes for doctor, patient and family.

An integrative medicine (IM) approach to the management of any condition involves a medical practitioner using a range of therapeutic options including conventional care, lifestyle management, psychosocial approaches and evidence based complementary medicine (CM). Many patients perceive – rightly or wrongly – that the conventional management of chronic conditions such as asthma, often focus exclusively on pharmaceutical measures while potentially ignoring other management

possibilities and therefore seek to broaden their health care by going outside the conventional health care system. An informed general practitioner can do an enormous amount to improve clinical outcomes and quality of life of asthma patients, but in order to do this, open lines of communication about the patient's views on alternative therapies is vital. Any disrespect for the patient's valid searching for a wider range of treatment options potentially leaves communication closed, and patients at greater risk of making

unsafe treatment choices, forgoing necessary conventional treatments, and having inadequate supervision.

It is not without reason that many patients and parents are concerned about the potential overprescription of medications and the side effects of asthma treatments. Antibiotic use in the first 2 years of life, for example, is associated with a 2–3 fold increased risk of developing asthma and hayfever in later life.<sup>1</sup> Other commonly used medications such as paracetamol, lead to an increased incidence of asthma and chronic obstructive pulmonary disease. Regular paracetamol intake in pregnancy is associated with an increased odds ratio of 1.62 for asthma and 1.86 for wheeze in offspring.<sup>2</sup> Such concerns about medications are not always widely publicised and it is unfortunate that patients often need to seek this information from a CM therapist rather than their doctor.

## Asthma and CM

More than 50% of asthmatics (adults and children) use some form of CM.<sup>3,4</sup> Studies also suggest that many parents choose to integrate CM into asthma management due to dissatisfaction with treatment outcomes

and/or side effects of conventional therapies. Among the most common therapies chosen by parents for their children are massage, relaxation exercises, diet, and vitamins.<sup>5</sup> For adults, the most used therapies in asthma are dietary and nutritional therapies, herbal remedies, meditation and homeopathy.<sup>6</sup>

A review of the use of 'unconventional therapies in asthma' suggested there is 'sufficient evidence to suggest that many of these therapies can provide objective and subjective benefit' and that, 'In view of the increasing popularity... there is now an urgent need for high quality research'.<sup>7</sup> There is concern that patients who use CM can potentially delay necessary conventional treatment as a result.<sup>8</sup>

### Acupuncture

Although there have been some positive trials in the use of acupuncture for asthma,<sup>9,10</sup> a recent Cochrane review of seven acupuncture trials concluded no clear benefit.<sup>11</sup>

### Breathing exercises

Breathing exercises are commonly used and have a more sound evidence base. For example, those with moderate to severe asthma who were given inspiratory muscle training showed improved asthma symptoms, reduced beta 2 agonist use, and reduced hospital accident and emergency visits, hospitalisation, and sick leave.<sup>12</sup>

Yoga breathing exercises, when learned from a trained yoga therapist, have been associated with significantly less asthma attacks per week, improved scores for drug treatment, and improved lung function.<sup>13</sup> Other studies have suggested that yoga training has been associated with nearly 70% of patients being able to reduce or stop medication under supervision.<sup>14</sup> It is important to note that there is a significant time commitment required to benefit from yoga therapy, but there are also many beneficial 'side effects' such as relaxation, better sleep, and improved quality of life.

### Buteyko method

The Buteyko method shows potential benefit

but until more definitive trials are completed there remains considerable debate as to whether benefits are physiological or purely subjective. Thus far it seems that practising the Buteyko method reduces hyperventilation, beta 2 agonist use, 'with a trend toward reduced inhaled steroid use', and improves quality of life despite no significant change in FEV1 levels.<sup>15-18</sup>

### Chiropractic

At present there is only anecdotal evidence for chiropractic use in asthma.<sup>19</sup>

### Homeopathy

Despite homeopathy being one of the more commonly used CMs for asthma, there is conflicting evidence at best. A review in the *Lancet* suggested a positive effect,<sup>20</sup> but the most recent and largest double blind trials suggest the effect is not significant.<sup>21,22</sup>

### Massage

There is some evidence in children to suggest that regular massage by parents before bed is associated with reduced anxiety, improved attitude toward asthma, and improved respiratory function.<sup>23</sup>

### Qigong

Qigong is a traditional Chinese medicine combining movement, meditation and breathing techniques. A pilot study of 30 patients showed improved peak flow, reduced hospital emergency visits, hospitalisation, health care costs, and sick leave.<sup>24</sup> More rigorous studies are needed to confirm these results.

### Relaxation and mind-body therapies

Emotions can play a clear role in triggering asthma. A review of 185 references concluded that panic and negative emotions affect asthma producing hyperventilation, increased autonomic lability, autonomic arousal, bronchoconstriction, and poor health care behaviours.<sup>25</sup> It seems that for children, family stress can be a significant factor in an increased likelihood of expressing a genetic disposition to asthma.<sup>26,27</sup> Predictive factors in paediatric asthma deaths include a significant range of psychosocial factors<sup>28</sup> indicating that

the clinical effect of emotional disturbance in childhood asthma can be considerable.<sup>29</sup>

Conditioning and the immune system has long been seen in both the stimulation of allergic responses and asthma exacerbation. A 'paper rose', for example, can induce allergic reaction in susceptible individuals.<sup>30</sup> An increased secretion of inflammatory hormones is a normal part of the 'fight or flight' response and therefore stress is 'pro-inflammatory', whereas stress reduction is 'anti-inflammatory'.<sup>31</sup> The 'relaxation response' is associated with a significant reduction in metabolic rate, respiratory muscle relaxation, reduced panic, reduced airway reactivity, improved lung function, promotion of diaphragmatic breathing and reduced need for medication. The relaxation response, however induced, seems to have positive effects on inflammatory illnesses including asthma and rheumatoid arthritis<sup>32</sup> and may partly explain the observed benefits of breathing exercises.

Reviews suggest a positive role for relaxation therapies in asthma with less use of medication, hospital visits and sick leave, although the methodology of some studies was inadequate.<sup>33</sup> Biofeedback<sup>34</sup> and hypnotherapy<sup>35</sup> may also be helpful with some reports suggesting reduced hospital admissions and reduced need for prednisolone and, subsequently, reduced side effects,<sup>36</sup> although reviews to date have been inconclusive.

Psycho-education, which includes education, behavioural skills, cognitive therapy and counselling, was revealed in a meta-analysis to reduce asthma attacks, be associated with better lung function, adherence to treatment, utilisation of health care, psychological wellbeing, and use of medication.<sup>37</sup>

### Nutrition

Food sensitivities to nuts, eggs, peanuts, fish, and shellfish can induce immediate asthma. Delayed reactions may occur in people with salicylate sensitivity. Foods high in salicylates include chocolate, banana, tomato sauces, citrus, milk and food colourings. It is thought that up to 20% of people have varying levels of aspirin sensitivity.<sup>38</sup>

A range of foods may play a positive role in asthma, although, as with other conditions, whole foods may be more effective than supplements.<sup>39</sup>

Breastfeeding is clearly beneficial. Children given formula milk in the first 4 months of life were 40% more susceptible to wheeze. Exclusive breastfeeding in the first 3 months of life reduces the risk of asthma and atopy.<sup>40,41</sup>

Foods that may be beneficial for asthma include those high in anti-oxidants such as vitamins E and C.<sup>42</sup> Vitamin B6 is often low in asthmatics and supplements have been found to be useful.<sup>43,44</sup> Asthmatics receiving selenium supplements have been shown to improve significantly.<sup>45</sup> Coffee and green tea reduce asthma symptoms possibly due to theophyllines. A diet rich in omega-3 fatty acids is beneficial for many inflammatory conditions, although the evidence for clinical effect of supplementary omega-3 in asthma is unconvincing.<sup>46</sup>

One large survey of children in New South Wales found that a diet high in polyunsaturated fats (eg. margarine, vegetable oil, omega-6 fatty acids) doubles the risk of asthma and may contribute to 17% of cases of asthma in 3–5 year olds.<sup>47</sup> There are benefits of increasing fish, fruits and vegetables in the diet of children. An Australian study found that children who eat fish more than once per week reduce their chance of developing asthma by one-third compared to those who eat no fish.<sup>48</sup> There is some evidence that a vegan exclusion diet and high fluid intake may lead to significant improvement in symptoms,<sup>49</sup> which may be due to the high intake of fruits and vegetables.<sup>50</sup>

Magnesium, because of its smooth muscle relaxant effect and anti-inflammatory properties, may have a role in the emergency treatment of asthma<sup>51</sup> as well as low dose supplements having long term benefits.<sup>52</sup>

In individuals with exercise induced asthma, a high salt diet is associated with poorer pulmonary function tests, therefore increasing fluid intake and reducing salt intake may play an important role for such patients.<sup>53</sup>

## Herbs

A clinical review of herbs used for asthma showed nine out of 17 trials reporting positive

outcomes,<sup>54</sup> although due to the size and quality of trials there is not definitive evidence for the use of any herbs as yet. Outcomes included clinically relevant improvement in lung function and/or symptom scores. Herbs that look promising include garlic, dried ivy leaf extract, ginkgo biloba, ephedra, TJ-96, ammi visnaga, lagundi, boswellia, some Ayurvedic Indian indigenous herbs, and thyme extract. It is important to note that herbs can have interactions with conventional medications and should be prescribed by appropriately trained health practitioners.

## Conclusion

A holistic approach adding CM therapies to conventional pharmacotherapy may offer patients the potential for safe control of symptoms and improved self management of asthma. To achieve optimal outcomes it is important to look at lifestyle and behavioural approaches as a major priority in treatment, judiciously use pharmaceutical measures, and offer evidence based CM for those wanting to explore adjunctive treatments.

### Summary of important points

- The IM approach may reduce the need for medication, reduce side effects, and improve quality of life.
- The IM approach is adjunctive to, and not a replacement for, conventional therapy, especially for asthmatics with a history of severe exacerbations.
- Asthmatics who use an IM approach still need to monitor their condition, have a clear action plan, and not delay conventional treatment when needed.
- Herbal preparations can have interactions with conventional medicines and should be prescribed by appropriately trained health professionals.

Conflict of interest: none.

## References

1. Wickens K, Pearce N, Crane J, Beasley R. Antibiotic use in early childhood and the development of asthma. *Clin Exp Allergy* 1999;29:766–71.
2. Shaheen SO, Newson RB, Henderson AJ, et al. ALSPAC Study Team. Prenatal paracetamol exposure

- and risk of asthma and elevated immunoglobulin E in childhood. *Clin Exp Allergy* 2005;35:18–25.
3. Blanc PD, Trupin L, Earnest G, Katz PP, Yelin EH, Eisner MD. Alternative therapies among adults with a reported diagnosis of asthma or rhinosinusitis: data from a population based survey. *Chest* 2001;120:1461–7.
4. Shenfield G, Lim E, Allen H. Survey of the use of complementary medicines and therapies in children with asthma. *J Paediatr Child Health* 2002;38:252–7.
5. Andrews L, Lokuge S, Sawyer M, Lillywhite L, Kennedy D, Martin J. The use of alternative therapies by children with asthma: a brief report. *J Paediatr Child Health* 1998;34:131–4.
6. Davis PA, Gold EB, Hackman RM, Stern JS, Gershwin ME. The use of complementary/alternative medicine for the treatment of asthma in the United States. *J Investig Allergol Clin Immunol* 1998;8:73–7.
7. Lewith GT, Watkins AD. Unconventional therapies in asthma: an overview. *Allergy* 1996;51:761–9.
8. Blanc PD, Kuschner WG, Katz PP, Smith S, Yelin EH. Use of herbal products, coffee or black tea, and over-the-counter medications as self treatments among adults with asthma. *J Allergy Clin Immunol* 1997;100:789–91.
9. Fung KP, Chow OK, So SY. Attenuation of exercise induced asthma by acupuncture. *Lancet* 1986;2:1419–22.
10. Jobst KA. Acupuncture in asthma and pulmonary disease: an analysis of efficacy and safety. *J Altern Complement Med* 1996;2:179–206, discussion 207–10.
11. EBM Reviews. Database of Abstracts of Reviews of Effects Centre for Reviews and Dissemination. Efficacy of acupuncture in asthma: systematic review and meta-analysis of published data from 11 randomised controlled trials. Database of Abstracts of Reviews of Effectiveness, Issue 1, 2005.
12. Weiner P, Azgad Y, Ganam R, Weiner M. Inspiratory muscle training in patients with bronchial asthma. *Chest* 1992;102:1357–61.
13. Nagarathna R, Nagendra HR. Yoga for bronchial asthma: a controlled study. *BMJ* 1985;291:1077–9.
14. Nagendra HR, Nagarathna R. An integrated approach of yoga therapy for bronchial asthma: a 3–54 month prospective study. *J Asthma* 1986;23:123–37.
15. Opat AJ, Cohen MM, Bailey MJ, Abramson MJ. A clinical trial of the Buteyko breathing technique in asthma as taught by a video. *J Asthma* 2000;37:557–64.
16. Kuiper D. Dysfunctional breathing and asthma. Trial shows benefits of Buteyko breathing techniques. *BMJ* 2001;323:631–2.
17. Thomas M, McKinley RK, Freeman E, Foy C. Prevalence of dysfunctional breathing in patients treated for asthma in primary care: cross sectional survey. *BMJ* 2001;322:1098–100.
18. Cooper S, Osborne J, Newton S, Harrison V, Thompson Coon J, Lewis S, Tattersfield A. Effect of two breathing exercises (Buteyko and pranayama) in asthma: a randomised controlled trial. *Thorax* 2003;58:674–9.
19. Balon JW, Mior SA. Chiropractic care in asthma and allergy. *Ann Allergy Asthma Immunol* 2004;93:555–60.
20. Reilly D, Taylor MA, Beattie NG, et al. Is evidence for homoeopathy reproducible? *Lancet*

- 1994;344:1601-6.
21. Lewith GT, Watkins AD, Hyland ME, et al. Use of ultramolecular potencies of allergen to treat asthmatic people allergic to house dust mite: double blind randomised controlled clinical trial. *BMJ* 2002;324:520.
  22. White A, Slade P, Hunt C, Hart A, Ernst E. Individualised homeopathy as an adjunct in the treatment of childhood asthma: a randomised placebo controlled trial. *Thorax* 2003;58:317-21.
  23. Field T, Henteleff T, Hernandez-Reif M, et al. Children with asthma have improved pulmonary functions after massage therapy. *J Pediatr* 1998;132:854-8.
  24. Reuther I, Aldridge D. Qigong yangsheng as a complementary therapy in the management of asthma: a single case appraisal. *J Altern Complement Med* 1998;4:173-83.
  25. Lehrer PM. Emotionally triggered asthma: a review of research literature and some hypotheses for self regulation therapies. *Appl Psychophysiol Biofeedback* 1998;23:13-41.
  26. Klinnert MD, Mrazek PJ, Mrazek DA. Early asthma onset: the interaction between family stressors and adaptive parenting. *Psychiatry* 1994;57:51-61.
  27. Mrazek DA, Klinnert MD, Mrazek P, Macey T. Early asthma onset: consideration of parenting issues. *J Am Acad Child Adolesc Psychiatry* 1991;30:277-82.
  28. Strunk RC, Mrazek DA, Fuhrmann GS, LaBrecque JF. Physiologic and psychological characteristics associated with deaths due to asthma in childhood. A case controlled study. *JAMA* 1985;254:1193-8.
  29. Bloomberg GR, Chen E. The relationship of psychological stress with childhood asthma. *Immunol Allergy Clin North Am* 2005;25:83-105.
  30. Mackenzie J. The production of the so-called 'rose cold' by means of an artificial rose. *Am J Med Sci* 1896;91:45-57.
  31. Carlson LE, Specia M, Patel KD, Goodey E. Mindfulness based stress reduction in relation to quality of life, mood, symptoms of stress, and immune parameters in breast and prostate cancer outpatients. *Psychosom Med* 2003;65:571-81.
  32. Smyth JM, Stone AA, Hurewitz A, Kaell A. Effects of writing about stressful experiences on symptom reduction in patients with asthma or rheumatoid arthritis: a randomised trial. *JAMA* 1999;281:1304-9.
  33. EBM Reviews. Database of Abstracts of Reviews of Effects Centre for Reviews and Dissemination. Relaxation therapies for asthma: a systematic review. Database of Abstracts of Reviews of Effectiveness. Issue 1, 2005.
  34. Lehrer PM, Vaschillo E, Vaschillo B, et al. Biofeedback treatment for asthma. *Chest* 2004;126:352-61.
  35. Ewer TC, Stewart DE. Improvement in bronchial hyper-responsiveness in patients with moderate asthma after treatment with a hypnotic technique: a randomised controlled trial. *BMJ* 1986;293:1129-32.
  36. Morrison JB. Chronic asthma and improvement with relaxation induced by hypnotherapy. *J R Soc Med* 1988;81:701-4.
  37. Devine EC. Meta-analysis of the effects of psycho-educational care in adults with asthma. *Res Nurs Health* 1996;19:367-76.
  38. Perry CA, Dwyer J, Gelfand JA, Couris RR, McCloskey WW. Health effects of salicylates in foods and drugs. *Nutr Rev* 1996;54:225-40.
  39. Ram FSE, Rowe BH, Kaur B. Vitamin C supplementation for asthma. *Cochrane Airways Group. Cochrane Database of Systematic Reviews*. 1, 2005.
  40. Oddy WH, Holt PG, Sly PD, et al. Association between breastfeeding and asthma in 6 year old children: findings of a prospective birth cohort study. *BMJ* 1999;319:815-9.
  41. Oddy WH. A review of the effects of breastfeeding on respiratory infections, atopy, and childhood asthma. *J Asthma* 2004;41:605-21.
  42. Forastiere F, Pistelli R, Sestini P, et al. Consumption of fresh fruit rich in vitamin C and wheezing symptoms in children. SIDRIA Collaborative Group, Italy (Italian Studies on Respiratory Disorders in Children and the Environment). *Thorax* 2000;55:283-8.
  43. Reynolds RD, Natta CL. Depressed plasma pyridoxal phosphate concentrations in adult asthmatics. *Am J Clin Nutr* 1985;41:684-8.
  44. Sur S, Camara M, Buchmeier A, Morgan S, Nelson HS. Double blind trial of pyridoxine (vitamin B6) in the treatment of steroid dependent asthma. *Ann Allergy* 1993;70:147-52.
  45. Hasselmark L, Malmgren R, Zetterstrom O, Unge G. Selenium supplementation in intrinsic asthma. *Allergy* 1993;48:30-6.
  46. Thien FCK, Woods R, De Luca S, Abramson MJ. Dietary marine fatty acids (fish oil) for asthma in adults and children. *Cochrane Airways Group. Cochrane Database of Systematic Reviews*. 1, 2005.
  47. Haby MM, Peat JK, Marks GB, Woolcock AJ, Leeder SR. Asthma in preschool children: prevalence and risk factors. *Thorax* 2001;56:589-95.
  48. Hodge L, Salome CM, Peat JK, Haby MM, Xuan W, Woolcock AJ. Consumption of oily fish and childhood asthma risk. *Med J Aust* 1996;164:137-40.
  49. Lindahl O, Lindwall L, Spangberg A, Stenram A, Ockerman PA. Vegan regimen with reduced medication in the treatment of bronchial asthma. *J Asthma* 1985;22:45-55.
  50. Denny SI, Thompson RL, Margetts BM. Dietary factors in the pathogenesis of asthma and chronic obstructive pulmonary disease. *Curr Allergy Asthma Rep* 2003;3:130-6.
  51. Sydow M, Crozier TA, Zielmann S, Radke J, Burchardi H. High dose intravenous magnesium sulfate in the management of life threatening status asthmaticus. *Intensive Care Med* 1993;19:467-71.
  52. Skobeloff EM, Spivey WH, McNamara RM, Greenspon L. Intravenous magnesium sulfate for the treatment of acute asthma in the emergency department. *JAMA* 1989;262:1210-3.
  53. Mickleborough TD, Gotshall RW, Cordain L, Lindley M. Dietary salt alters pulmonary function during exercise in exercise-induced asthmatics. *J Sports Sci* 2001;19:865-73.
  54. Huntley A, Ernst E. Herbal medicines for asthma: a systematic review. *Thorax* 2000;55:925-9.

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