Yoga for asthma? A systematic review of randomized clinical trials
Posadzki P, Ernst E

CRD summary
This review concluded that the belief that yoga alleviates asthma was not supported by sound evidence, and more rigorous trials were needed. These conclusions are likely to be reliable.

Authors' objectives
To assess the effectiveness of yoga as a treatment for asthma.

Searching
Seven databases, including MEDLINE, EMBASE, and CTRI were searched, for articles from inception to October 2010, without language restrictions. Reference lists of retrieved studies and relevant book chapters were examined. Experts were contacted to identify unpublished studies.

Study selection
Randomised and non-randomised trials were eligible if they studied any type of yoga in patients with asthma. Trials of patients of any age, either gender, and with any duration or intensity of asthma, were eligible. Trials of breathing exercises that mimicked yogic breathing were excluded. All study designs were eligible for evaluating safety data.

In the included trials, the types, durations, and intensities of the yoga interventions varied or were not reported. The outcomes and control treatments varied, including sham, no intervention, usual care and relaxation exercises. The patients' asthma severity ranged from mild, to moderate-to-severe. Three trials were conducted in India, two in the USA, one in Australia, and one in Germany. Publication dates ranged from 1985 to 2009.

Two reviewers independently selected trials for inclusion.

Assessment of study quality
The Cochrane risk of bias tool was used to evaluate the risk of bias in the methods of randomisation, allocation concealment, blinding of patients, personnel and outcome assessors, completeness of outcome data, selective outcome reporting, and other sources of bias. Trials were given a score for each domain: 1 for low risk, 0 for unclear risk, and -1 for high risk. Trial quality was also assessed using the Jadad scale, for randomisation, blinding, and withdrawals or drop-outs, with a maximum score of 5 points.

Two reviewers independently assessed trial quality, with disagreements resolved by discussion.

Data extraction
Two reviewers independently extracted data on the main outcomes (decided by the reviewers), with disagreements resolved by discussion.

Methods of synthesis
A narrative synthesis was presented.

Results of the review
Six randomised trials and one non-randomised trial met the inclusion criteria (445 participants). Most trials scored -3 or -2 for Cochrane risk of bias (all had high risk in methods of allocation concealment); one trial scored 2 and another scored 4. Jadad scores were similar (range 1 to 5).

Evidence from three randomised trials and one non-randomised trial suggested that yoga led to a significantly greater reduction in spirometric measures, airway hyperresponsivity, dose of histamine needed to provoke a 20% reduction in forced expiratory volume in the first second, weekly number of asthma attacks, and need for drug treatment. Three randomised trials showed no positive effects compared with control interventions.
Only one trial assessed adverse effects, and found none.

**Authors' conclusions**
The belief that yoga alleviates asthma was not supported by sound evidence. More rigorous trials were needed.

**CRD commentary**
The review addressed a clear question and was supported by reproducible eligibility criteria. Attempts to identify relevant trials, in any language, were undertaken by searching electronic databases; efforts were also made specifically to identify unpublished trials. Suitable methods (independent duplicate processes) were used to reduce the risk of reviewer error and bias, throughout the review. Trial quality and risk of bias were assessed, and the results were used in interpreting the findings.

Trial details were provided – full results were often missing, but it was unclear whether or not this was due to the poor reporting of the trials that the authors described. The authors did not report their evaluation of the safety data reported in studies other than trials. An appropriate narrative synthesis of the data was presented.

The authors’ conclusions were suitably cautious in reflecting the limited evidence available, and are likely to be reliable.

**Implications of the review for practice and research**
**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated a need for long-term effectiveness, and safety data, with better trial designs and reporting.

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