

# CAHE JC Critically Appraised Article Summary

## Journal Club Details

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<b>Date of submission</b>	2008 October
<b>Journal Club location</b>	Lyell McEwin Hospital
<b>JC Facilitator</b>	Cassie Sealby

### Clinical Scenario

Is there evidence for the effectiveness of spirometry in preventing pulmonary complications or improving pulmonary outcomes amongst patients who underwent upper abdominal surgery?

### Review Question/PICO/PACO

- P** Upper abdominal surgery; fractured ribs; pneumothorax
- I** Incentive spirometry
- C** Standard physiotherapy/other airway clearance techniques
- O** Pulmonary complications, improved pulmonary outcome parameters, length of stay

### Article/Paper

Overend TJ, Anderson CM, Lucy D, et al. The Effect of Incentive Spirometry on Postoperative Pulmonary Complications: A Systematic Review. *Chest* 2001; 120(3): 971-978.

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<b>Article Methodology:</b>	Systematic Review
<b>Returned JC on:</b>	3 October 2008
<b>By CAHE staff member:</b>	Zuzana Machotka

Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>The study has a clearly focused question.</p> <p><i>Population:</i> The article did not explicitly state the type of participants but has implied the inclusion of all post-operative human subjects.</p> <p><i>Intervention:</i> The intervention of interest was Incentive Spirometry used post-operatively.</p> <p><i>Outcome:</i> The study focused on the use Incentive Spirometry for the prevention of post-operative pulmonary complications, all outcomes in reference to effectiveness of IS was considered</p>
2		✓		<p>The study did not specify inclusion criteria for study designs specifically. However exclusion criteria were reported, such as reviews, cost analysis, surveys, patient monographs, letters, guidelines and commentaries.</p> <p>Is it worth continuing? YES</p>
3		✓		<p>The bibliographic search has included a wide range of electronic databases and the reviewers did a follow-up on the reference lists. No contact with experts was however conducted nor did the authors review unpublished articles or articles in non-English language.</p>
4	✓			<p>The article reports 'a critical appraisal form (CAF) was developed' as no previous tool met the review team's needs. A paragraph in the article reports sections included in the CAF but no specific detail of scoring was reported.</p> <p>A consensus was reached by the 'review team' on the 46 studies identified from initial search. The review team, consisting of 3 assessors, was used for the critical appraisal. Each included article was assessed by two of the three assessors. This varied between articles as to which two.</p> <p>Interestingly, articles were excluded due to 'methodological flaw' identified from the critical appraisal. This was done retrospectively of initial search.</p>
5				<p>The heterogeneity of studies (in terms of outcomes used) did not allow pooling of results in a meta-analysis. The authors provided a narrative summary of the most important findings.</p>
6				<p>The results were presented using tables and narrative report. Quality rating scores were not reported. However reason for exclusion after appraisal for subsequent studies is displayed in table. Thereafter primary results from each included study were summarised in table form.</p> <p><i>Bottom line result:</i> This review concludes that the evidence does not support the use of Incentive Spirometry for the purpose of decreasing incidence of post-operative pulmonary complications.</p>

Ques No.	Yes	Can't Tell	No	Comments
7				Precision of results could not be determined as there is no statistical analysis used in this review for the effectiveness of intervention (IS on PPC).
8		✓		Whilst the review seemed to have covered a wide range of post-surgical patients, applicability of the results to the local population should be taken with caution.
9			✓	<p>The aim of this article was to assess the effectiveness of IS on PPC. Outcomes were in relation to patient within a hospital setting. Patient care provided by the family, medical and hospital staff should be considered when delivering patient intervention. Hence, they will have an influence on outcomes. This is especially true in reference to patient compliance. The review did not accept conclusions from some of the articles, as they did not report on compliance which the authors believed could affect the way results can be validly assessed.</p> <p>Overall, as intervention was applied within a community/hospital setting there would be numerous stakeholders to consider in reference to results of review. Financial aspects to intervention were briefly noted. Influence of results to policy makers and professionals, family and carers or the wider community were not reported.</p>
10			✓	<p>Results of this review have not been sufficient as to warrant policy or practice change. Clinical significance and the precise mechanisms behind the any beneficial effects remain unclear and should therefore be further explored.</p> <p>It should be of note though that no evidence was found that IS was associated with harmful side effects in all the studies reviewed.</p>