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## Critically appraised paper: Preoperative physiotherapy education halved postoperative pulmonary complications in patients after upper abdominal surgery [commentary]

Shane Patman

*The University of Notre Dame Australia*, shane.patman@nd.edu.au

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No changes have been made to this article.

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Appraisal

Critically appraised paper: Preoperative physiotherapy education halved postoperative pulmonary complications in patients after upper abdominal surgery [commentary]

Commentary

The trial results point towards an effective intervention in which a single 30-minute preoperative coaching session from a physiotherapist on breathing exercises can halve the incidence of postoperative pulmonary complications after upper abdominal surgery. However, there were several imbalances in the randomised groups that might explain some of the effect. The intervention group: was younger; had lower American Society of Anaesthesiology scores; had fewer respiratory, diabetes and cardiac co-morbidities; had fewer current smokers and had a lower pack-year history. Additionally, the intervention group reportedly had higher preoperative handgrip strength and estimated  $VO_2$ max. Further, less upper gastrointestinal/hepatobiliary surgeries were performed in the intervention group. Are any of these large enough to create an unbalanced risk profile between intervention and control groups, and therefore cast doubt on the results? Probably not in isolation, but collectively? The investigators undertook adjustments to their results for some baseline variables considered to potentially affect the primary outcome, but it is speculative whether this was sufficient. What is known is that presently, preadmission education by physiotherapists for those undergoing upper abdominal surgery is not usual care in Australian and New Zealand hospitals.<sup>1</sup> Therefore, for clinical practice change to occur, results have to pass the 'water cooler test'. It intuitively seems too good to be true that such a minimal-risk

preoperative intervention of 'shock and awe' education on risks of postoperative pulmonary complications along with coaching on simple breathing exercises would have the profound impact of halving complications in the upper abdominal surgery cohort. Implementation challenges could occur if decision-makers were not fully convinced by or committed to the results. Anecdotally, physiotherapy preoperative assessment and education of those undergoing 'at-risk' surgery, such as cardiac, lung lobectomy and upper abdominal surgery, was prevalent in the later part of the 20th century<sup>2</sup> but funding for preoperative education, in the absence of evidence, has long been directed elsewhere. This trial is generating much conversation, but needs replicating across jurisdictions before the water cooler chatter can settle and practice change ensues.

**Provenance:** Invited. Not peer reviewed.

**Shane Patman**

*School of Physiotherapy, The University of Notre Dame Australia, Perth, Australia*

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2. Reeve J, et al. *N Z J Physiother.* 2016;44:33–49.