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# Effect of Incentive Spirometry on Preventing Atelectasis: A Review of the Literature

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# Effect of Incentive Spirometry on Preventing Atelectasis

## A Review of the Literature

Caitlin Powers, SN WCU and Caine Teal, SN WCU



### What We Learned

Some Nursing Research focuses on the clinical setting, but not all is appropriate to use as a basis for practice. Researchers may be unable to control for certain variables making it difficult to interpret or use the results, such as patient adherence. As students it was interesting to relate information from our clinical setting into the research classroom. We learned that evidence-based practice should be the basis for clinical nursing practice in order to provide the safest care to patients. Originally, we intended to confirm the idea that incentive spirometry is the best measure to prevent post-operative atelectasis, but now understand there are a variety of interventions available that help prevent pulmonary complications post-operatively.

#### Background

- Post-operative complications, such as atelectasis are easily prevented
- Nurses are at the forefront in preventing these complications
- Atelectasis increases hospital length of stay (LOS)
- Atelectasis increases hospital costs
- Incentive spirometry provides visual feedback to the patient

#### Purpose & Aims

- To examine post-operative atelectasis in the clinical setting.
- To develop a literature review of current peer reviewed research manuscripts.

#### Methods

- Database search: CINAHL
- Search terms: incentive spirometer, spirometry, atelectasis, pulmonary complications, pneumothorax
- Inclusion criteria
  - Nurse authored research studies
  - Published 2008-2014

#### Results

- Five research articles met the criteria
- Overall incentive spirometry was found to be effective more often than not.
- Two articles focused on post-operative respiratory care
- One article explored the effectiveness of a video game combined with breathing exercises
- One article discussed the effects of preoperative use of the incentive spirometer compared to only post operative
- One article explained the use of a chest band as an alternative to the incentive spirometer



#### Conclusions

- Some found that incentive spirometry is not effective and can even go on to cause harm to the lungs
- Others encourage the use of the incentive spirometer and believe it positively impacts the health of post-operative patients
- Multiple interventions allow for the best results in post operative patients, not just the sole use of incentive spirometry.

#### Next Steps

- Additional research
  - Tracking different age group progression
  - Conduct studies on patients undergoing similar surgeries

#### Limitations

- Difficult to find studies conducted on the same population
- Few alternative suggestions were found in this sample

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