PNMEDICAL

# RMT AND POSTOPERATIVE PULMONARY COMPLICATIONS RISK

Postoperative pulmonary complications (PPCs) caused by injury are the leading cause of sickness and death after major cardiac or abdominal surgery. Many studies and clinical trials have assessed the impact of preoperative inspiratory muscle training (IMT) on postoperative patient outcome.

In this blog post, we're going to take a look at a systematic review of available literature that aims to evaluate the effectiveness of preoperative IMT on PPCs in adults undergoing cardiac or major abdominal surgery. It attempts to do this by assessing all-cause mortality and adverse events.

## Key Findings

- Postoperative pulmonary complications (PPCs) due to injury are the leading cause of sickness and death after major cardiac or abdominal surgery.
- Meta-analysis of pooled data demonstrates that preoperative respiratory muscle training (RMT) reduces postoperative pneumonia, atelectasis and duration of hospital stay after cardiac or major abdominal surgery.
- The effect of RMT on postoperative mortality is uncertain and requires further data.
- RMT offers a safe and cost effective method of reducing the risk of PPC.

## Patient Impact

RMT effectively reduces PPC, and duration of hospital stay and is recommended as safe and cost effective measure to reduce PPC risk.

## Study Methods

The following databases were searched for randomized clinical trials (RCTs) that compared preoperative IMT and usual preoperative care for adults undergoing cardiac or major abdominal surgery: CENTRAL, MEDLINE, EMBASE, CINAHL, LILACS, and ISI Web of Science. Appropriate documents that met the requirements were identified, analyzed, and their information recorded accordingly. It should be noted that 12 RCTs of low or moderate quality were included, but they all met inclusion criteria.

## Study Results

Meta-analysis of pooled data demonstrates that preoperative IMT reduces postoperative pneumonia, atelectasis and duration of hospital stay. The effect of IMT on postoperative mortality is uncertain and requires further data. Preoperative IMT significantly reduces the incidence of postoperative pulmonary complications such as pneumonia and atelectasis. It also led to reduced hospital stay duration in patients undergoing cardiac or major abdominal surgery. As postoperative pneumonia is associated with high risk of postoperative sickness and death, IMT offers a safe and cost effective method to reduce the risk of PPCs.

# References

*Katsura M., et al. Preoperative inspiratory muscle training for postoperative pulmonary complications in adults undergoing cardiac and major abdominal surgery. Published online 5. Oct 2015.*