

# Evidence that respiratory exercises before heart surgery can prevent pneumonia

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Patients who practice respiratory physical therapy exercises before elective cardiac surgery may reduce serious pulmonary complications later, finds a new evidence review from *The Cochrane Library*.

Preoperative therapy that includes muscle training, general exercise, and, especially, coughing and breathing exercises, can help [heart patients](#) recover faster and with fewer complications.

Lead study author, Erik Hulzebos, Ph.D., a clinical exercise physiologist and physical therapist at the University Medical Center, Utrecht in the Netherlands, said, "Preoperative physical therapy not only can reduce postoperative pulmonary complications, it can also shorten the hospital stay of patients who elect to have cardiac surgery by an average of three days."

Researchers studied the effectiveness of physical therapy to curb pulmonary complications in high risk patients before cardiac surgery. Analysis included 856 participants in eight [randomized trials](#) with a preoperative [physical exercise](#) component. Patients who had preoperative physical therapy were less likely to experience partial [lung collapse](#)

and pneumonia following heart surgery.

Patients who received physical therapy before their operation were part of what Hulzebos called the "better in, better out strategy." He pointed out, "It is important to stratify high and low risk pulmonary risk patients before surgery so the high risk patients can be given tailored care to prevent pulmonary complications post surgery."

Ann Bolger, M.D., a cardiologist at the University of California-San Francisco said, "This is a great study to have in literature because it underscores what we suspected—that preoperative pulmonary preparation before cardiovascular surgery maximizes the opportunity for patients to do well afterward."

Bolger, who teaches patients how to use respiratory physical therapy before surgery, said, "[Muscle training](#) when done before surgery absolutely helps. Pulmonary preoperative exercises are impactful. And as a resource, educating patients about the importance of respiratory exercise before heart surgery is not necessarily a high cost intervention."

**More information:** Hulzebos EHJ, Smit Y, Helders PPJM, vanMeeteren NLU. Preoperative physical therapy for elective cardiac surgery patients. *Cochrane Database of Systematic Reviews* 2012, Issue 11. Art. No.: CD010118. [DOI: 10.1002/14651858.CD010118.pub2](#)

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