Lung Complications After Surgery

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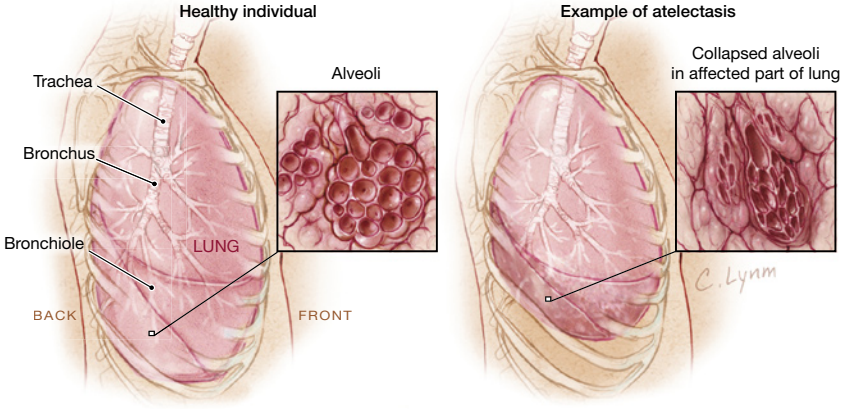
Lung Complications After Surgery

Risks associated with surgical procedures include **pulmonary** (lung) complications. These lung complications can be severe, and, in some cases, even fatal. Certain surgical procedures are more likely to be associated with lung complications, including operations on the lungs, the heart, and the upper abdomen. The October 14, 2009, issue of *JAMA* is a theme issue devoted to surgical care and includes an article about pulmonary complications after surgery.



COMPLICATIONS

- **Hypoxemia**: low oxygen concentration in the blood, leading to lower oxygen delivery to body tissues
- **Atelectasis**: collapse of the **alveoli** (areas in the lung where ventilation and oxygen exchange take place)
- **Bronchospasm**: tightening of the smooth muscle of the airways, restricting air exchange
- **Pneumonia**: infection of lung tissue
- **Pneumothorax**: a collection of air in the **pleural space** (the area around the lung). The air can compress the lung, the heart, and the large blood vessels around the heart.
- **Respiratory failure**: When a person develops respiratory failure, he or she cannot breathe adequately for his or her needs. Often, **mechanical ventilation** (a ventilator, also known as a breathing machine) is required to support the person while respiratory failure is treated. Respiratory failure is a serious condition requiring intensive care unit (ICU) care.
- **Pulmonary embolism**: A blood clot from the deep veins may come loose and travel into the lungs, where it blocks blood flow. This may impair oxygen uptake and heart function.

PREVENTION

- Stop smoking. Smoking limits the amount of oxygen carried to the body's tissues. Smoking also damages the **cilia** (hairlike structures that help remove mucus from the lungs).
- Evaluation and treatment of preexisting lung disease is the most important way to reduce the chance of lung complications after surgery. Optimizing lung function in persons who have chronic obstructive pulmonary disease (COPD), emphysema, or asthma may require adding medications or using techniques to clear secretions.
- Eliminating infection, such as bronchitis or pneumonia, may require postponing an elective surgical procedure for proper antibiotic treatment (for a bacterial infection) or allowing a viral infection to run its course.
- Proper nutrition and improved physical condition help reduce the chance of pulmonary complications, especially for major operations.

FOR MORE INFORMATION

- American Lung Association
  www.lungusa.org
- American Society of Anesthesiologists
  www.asahq.org
- National Heart, Lung, and Blood Institute
  www.nhlbi.nih.gov
- American College of Surgeons
  www.facs.org

INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page Index on *JAMA*'s Web site at www.jama.com. Many are available in English and Spanish. A Patient Page on preparing for surgery: evaluation of lung function was published in the May 16, 2007, issue; one on intensive care units was published in the March 25, 2009, issue; one on chronic obstructive pulmonary disease was published in the November 26, 2008, issue; and one on pulmonary embolism was published in the January 11, 2006, issue.

Sources: American Lung Association; National Heart, Lung, and Blood Institute; American Society of Anesthesiologists; Society of Critical Care Medicine; American College of Surgeons

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