



## Atelectasis

### What is atelectasis?

An abnormal condition in which all or part of the lung becomes airless and collapses, preventing the exchange of oxygen and carbon dioxide.

### What causes atelectasis?

Atelectasis is caused by anything that prevents the lungs from expanding fully with each breath.

- When we take a deep breath, the bottom and back of our lungs will fill with air first. Conditions such as a weak or paralyzed diaphragm may not allow a patient to take a deep, full breath. Shallow breathing creates a situation where air may not make it to the air sacs at the base of your lungs; therefore, leading to collapse.
- If an airway becomes blocked from a mucus plug, thick secretions, or a foreign object such as food, air cannot get past the blockage to fill the air sacs, causing this area of the lung to deflate.
- Atelectasis is common after surgery. The medicine used during surgery to make you sleep can decrease or stop your normal effort to breathe and urge to cough. Sometimes, especially after chest or abdominal surgery, pain may keep you from taking deep breaths. As a result, part of your lung may collapse or not inflate well.
- Pressure from outside the lungs also can make it hard to take deep breaths. Many factors can cause pressure outside the lungs, including a tight body cast, bone deformity or hardware, a pleural effusion (fluid buildup between the ribs and the lungs) or a pneumothorax (air buildup between the ribs and the lungs).

### Risk Factors:

- Spinal cord injury level of T6-7 and above
- Inability to take a deep breath
- Weakened cough effort or no cough effort
- Prolonged bed rest
- Shallow breathing
- Rib fractures

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## Symptoms may include:

- Shortness of breath
- A decrease in oxygen saturation
- Increased heart rate
- Chest tightness
- Increased work of breath
- Or a patient may not experience any symptoms at all

## How is it diagnosed?

A physician will diagnose atelectasis by reviewing a patient's symptoms, physical examination, chest x-ray, CT scan and on occasion a bronchoscopy (viewing the inside of the lung with a tube and camera).

## Prevention:

- Getting up and out of bed is often the best level of prevention
- Deep breathing (use your incentive spirometer to measure your lung capacity)
- Strong and effective cough
- Suctioning when needed
- Stop smoking
- Repositioning while in bed
- Take your breathing treatments and medications when they are ordered and scheduled

## Treatment:

- Stop Smoking
- Take deep breaths
- Work on strengthening your cough
- Supplemental oxygen
- Suctioning to remove secretions
- Bronchoscopy if secretions or mucus plug cannot be removed with suction
- There are many treatments and medications that help prevent atelectasis. Nebulizers with bronchodilators such as albuterol can open airways and help with secretion mobilization. Your physician and Respiratory Therapist will decide which options are best

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