THE STUDY VAULT

RESPIRATORY

ATELECTASIS

DISEASE / PATHOLOGY

- Partial or complete collapse of alveoli causing decreased gas exchange and lung volume.
- Common postoperative complication: anesthesia, pain, immobility, and shallow breathing reduce alveolar expansion.
- Obstructive atelectasis: mucus plug, tumor, foreign body. Compressive: pleural fluid/air or external pressure.
- Collapsed alveoli cause V/Q mismatch -> hypoxemia; retained secretions increase pneumonia risk.
- NCLEX focus: prevention is frequent deep breathing, coughing, early ambulation, and incentive spirometry.

RISK FACTORS

- Recent surgery/anesthesia, especially abdominal or thoracic surgery.
- Immobility, splinting from pain, opioid/sedative use, weak cough, neuromuscular weakness.
- COPD/asthma, smoking, obesity, older age, and thick secretions/dehydration.
- Airway obstruction: mucus plug, aspiration/foreign body, tumor.
- External compression: pleural effusion, pneumothorax, abdominal distention.

SIGNS AND SYMPTOMS

- May be asymptomatic if small; common cues include mild dyspnea, tachypnea, cough, low-grade fever.
- Assessment: decreased breath sounds, crackles over affected area, decreased chest expansion.
- Hypoxemia may show restlessness, tachycardia, or falling SpO2.
- Urgent: severe dyspnea, respiratory distress, cyanosis, or persistent hypoxemia despite oxygen.
- Post-op clue: increasing O2 needs with poor incentive spirometry performance.

DIAGNOSTIC TESTING

- Chest x-ray: volume loss, elevated diaphragm, mediastinal shift toward affected side if large.
- CT may identify obstruction or unclear findings.
- Pulse oximetry/ABG evaluate oxygenation and ventilation severity.
- Bronchoscopy may diagnose/remove obstruction if mucus plug or foreign body suspected.
- Nursing: assess pain control and ability to cough before assuming infection.

TREATMENT

- Assess first: airway, SpO2, work of breathing, pain level, cough effectiveness, breath sounds.
- Turn, cough, deep breathe; incentive spirometry every hour while awake as ordered; early ambulation.
- Optimize pain control so patient can breathe deeply, but monitor sedation/respiratory depression.
- Hydration, humidification, chest physiotherapy, suctioning if patient cannot clear secretions.
- Treat cause: bronchoscopy for obstruction; chest tube/thoracentesis if compression from air/fluid.
- Need-to-know: increasing O2 alone does not reopen alveoli; lung expansion measures are priority.

PATIENT EDUCATION

- Teach incentive spirometry: slow deep inhale, hold 3-5 seconds, repeat as prescribed; use even when tired.
- Splint incision with pillow before coughing; do not avoid coughing because of pain.
- Ambulate early and change position often; sit upright for deep breathing.
- Drink fluids if allowed to thin secretions; avoid smoking/vaping.
- Call provider for fever, worsening cough, colored sputum, chest pain, or increasing shortness of breath.
- After surgery: report inability to take deep breaths or increasing sleepiness with opioids.

ADDITIONAL NOTES:

- Priority post-op prevention: incentive spirometer + coughing + ambulation.
- Common confusion: atelectasis is alveolar collapse; pneumonia is infection.
- Low-grade fever early post-op can occur with atelectasis; persistent fever suggests infection.