**Ineffective Breathing Pattern**

**Related to respiratory muscle fatigue**

**Definition**

*Inspiration and/or expiration that does not provide adequate ventilation*

**Assessment**

- History of respiratory disorder
- Respiratory status, including rate and depth of respiration, symmetry of chest expansion, use of accessory muscles, presence of cough, anterior-posterior chest diameter, palpation for fremitus, percussion of lung fields, auscultation of breath sounds, and pulmonary function studies
- Cardiovascular status, including heart rate and rhythm, blood pressure, and skin color, temperature, and turgor
- Neurologic and mental status, including level of consciousness and emotional level
- Knowledge, including current understanding of physical condition and physical, mental, and emotional readiness to learn

**Defining Characteristics**

- Accessory muscle use
- Altered chest excursion
- Altered respiratory rate or depth or both
- Assumption of three-point position
- Decreased inspiratory or expiratory pressure
- Decreased minute ventilation
- Decreased vital capacity
- Decreased tidal volume (adult tidal volume 500 ml at rest)
- Dyspnea
- Increased anterior-posterior diameter
- Nasal flaring
- Orthopnea
- Prolonged expiration phase
- Pursed-lip breathing
- Shortness of breath

**Expected Outcomes**

- Patient’s respiratory rate will stay within 5 breaths/minute of baseline.
- Arterial blood gas (ABG) levels will return to baseline.
- Patient will report feeling comfortable when breathing.
- Patient will report feeling rested each day.
- Patient will demonstrate diaphragmatic pursed-lip breathing.
- Patient will achieve maximum lung expansion with adequate ventilation.
- Patient will demonstrate skill in conserving energy while carrying out activities of daily living (ADLs).
Suggested NOC Outcomes

Mechanical Ventilation Response: Adult; Respiratory Status: Airway Patency; Respiratory Status: Gas Exchange; Respiratory Status: Ventilation; Vital Signs

Interventions and Rationales

- Assess and record respiratory rate and depth at least every 4 hours to detect early signs of respiratory compromise. Also assess ABG levels, according to facility policy, to monitor oxygenation and ventilation status.
- Auscultate breath sounds at least every 4 hours to detect decreased or adventitious breath sounds; report changes.
- Assist patient to a comfortable position, such as by supporting upper extremities with pillows, providing overbed table with a pillow to lean on, and elevating head of bed. These measures promote comfort, chest expansion, and ventilation of basilar lung fields.
- Help patient with ADLs, as needed, to conserve energy and avoid overexertion and fatigue.
- Administer oxygen as ordered. Supplemental oxygen helps reduce hypoxemia and relieve respiratory distress.
- Suction airway as needed. Retained secretions alter the ventilatory response, thus reducing oxygen, leading to hypoxemia.
- Schedule necessary activities to provide periods of rest. This prevents fatigue and reduces oxygen demands.
- Teach patient about:
  - pursed-lip breathing
  - abdominal breathing
  - performing relaxation techniques
  - taking prescribed medications (ensuring accuracy of dose and frequency and monitoring adverse effects)
  - scheduling activities to avoid fatigue and provide for rest periods.
These measures allow patient to participate in maintaining health status and improve ventilation.
- Refer patient for evaluation of exercise potential and development of individualized exercise program. Exercise promotes conditioning of respiratory muscles and patient’s sense of well-being.

Suggested NIC Interventions

Acid–Base Monitoring; Airway Management; Airway Suctioning; Anxiety Reduction; Exercise Promotion; Oxygen Therapy; Progressive Muscle Relaxation; Respiratory Monitoring; Ventilation Assistance

Evaluations for Expected Outcomes

- Patient’s respiratory rate remains within established limits.
- Patient’s ABG levels return to and remain within established limits.
- Patient indicates, either verbally or through behavior, feeling comfortable when breathing.
- Patient reports feeling rested each day.
- Patient performs diaphragmatic pursed-lip breathing.
- Patient demonstrates maximum lung expansion with adequate ventilation.
- When patient carries out ADLs, breathing pattern remains normal.
**Documentation**

- Patient’s expressions of comfort in breathing, emotional state, understanding of medical diagnosis, and readiness to learn
- Physical findings from pulmonary assessment
- Interventions carried out and patient’s responses to them
- Evaluations for expected outcomes

**REFERENCE**