8.1: Oxygenation Introduction

Learning Objectives

- Assess the patient for objective and subjective manifestations of impaired oxygenation
- Distinguish normal and abnormal assessment data
- Adapt care based on oxygenation assessment data
- Interpret diagnostic tests and lab values indicative of a disturbance in oxygenation
- Identify evidence-based practices

Sufficient oxygenation is vital to maintain life. When prioritizing nursing interventions, we often refer to using the “ABCs,” an acronym used to signify the importance of maintaining a patient’s airway, breathing, and circulation. Several body systems work collaboratively during the oxygenation process to take in oxygen from the air, carry it through the bloodstream, and adequately oxygenate tissues. It is important that all parts of the system work together to ensure that oxygen is delivered appropriately to tissues within each system. Any alteration in these systems can have catastrophic implications on a patient’s health. First, the airway must be open and clear. The chest and lungs must mechanically move air in and out of the lungs. The bronchial airways must be open so that air can reach the alveoli, where the exchange of oxygen and carbon dioxide occurs. The heart must effectively pump oxygenated blood from the lungs and through the systemic arteries. There must be adequate amounts of hemoglobin in the blood to sufficiently carry the oxygen molecules to the tissues. However, several medical conditions such as asthma, chronic obstructive pulmonary disease (COPD), pneumonia, heart disease, and anemia can impair the body’s ability to effectively complete this oxygenation process. This chapter will review these basic concepts related to oxygenation and apply the nursing process to patients who are experiencing alterations in oxygenation.

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