5.9: Summary

Oxygen is essential to life. The main goal of oxygen therapy is to prevent hypoxemia, thereby preventing hypoxia that could result in tissue damage and cell death. Hypoxia, if caused by certain medical conditions, can be managed and prevented by oxygen therapy. In other instances, such as with anemia and decreased cardiac output, the effects of oxygen therapy will be limited.

Always follow the guiding principles of the oxygen therapy protocols of your local health authority to administer oxygen safely to manage hypoxia and prevent the side effects and hazards of oxygen therapy.

Key Takeaways

- Understand the pathophysiological factors affecting the gas exchange of oxygen. Understanding how the respiratory system works is key to knowing how to prevent and manage hypoxia.
- Hypoxia is a medical emergency. Be aware of the signs and symptoms of hypoxia, and of patients who are at risk for hypoxia.
- Oxygen therapy is a medical intervention. Ensure correct patient, correct flow rate, and correct connection to oxygen source. Oxygen may be initiated in emergency situations without a physician’s order.
- Care should be taken to avoid interruption of oxygen therapy in situations including ambulation or transport for procedures. If using a portable tank during transport or ambulation, ensure there is a sufficient reserve of oxygen.
- Oxygen is a medication and should be prescribed with a target saturation range.
- For adults, the recommended target range for oxygen saturation is 92% to 98%. Oxygen levels decrease slightly with age, especially in patients over 70 years. A saturation of 94% may be considered normal in a patient with heart failure or underlying lung disease.
- For most patients with COPD, the target oxygen saturation range is 88% to 92%.
- Be aware of the causes of hypoxemia and treatments related to managing and preventing hypoxia.
• Oxygen therapy has benefits and hazards. Be aware of how to handle the administration of oxygen safely and monitor for side effects.
• Contact the respiratory therapist in the health care agency with questions or concerns related to oxygen therapy.

Suggested Online Resources

1. British Columbia Institute of Technology (BCIT) / Canadian Association of Critical Care Nurses (CACCN): The oxygen supply and demand framework: A tool to support integrative learning. This article discusses oxygenation and perfusion in the body.

2. Canadian Centre for Occupational Health and Safety. This website provides standards for the safe use of oxygen in the hospital and home.

3. Canadian Thoracic Society: Canadian respiratory guidelines. This website provides Canadian guidelines related to respiratory conditions such as chronic obstructive pulmonary disease (COPD), asthma, bronchitis, infectious respiratory diseases, and sleep apnea, as well as home ventilation.

4. College of Respiratory Therapists of Ontario: Oxygen therapy. Clinical best practice guidelines. This document reviews Canadian standards for the management of oxygen therapy. This resource provides information on oxygen equipment, describes how oxygen works in the body, lists oxygen guidelines according to Canadian law, and gives a review of hyperbaric oxygen therapy.

5. Thorax: Guideline for emergency oxygen use in adult patients. This British journal article provides the most current evidence-based material related to oxygen therapy.

6. Vancouver Coastal Health: Course catalogue registration system (CCRS). This system offers over 600 online and classroom health-related courses from Vancouver Coastal Health, Providence Health Care, Fraser Health Authority, and Island Health. You must create an account to access this system of free courses (select the “New User” button).

References


