

Key Medical Terms Associated with Respiratory System

Aspiration: Means to draw in or out. It has two meanings:

1. Breathing is a foreign object into the trachea and lungs - such as pharyngeal secretions, food or drink, or stomach contents. A person may either inhale the material, or it may be blown into the lungs during positive pressure ventilation or CPR. When pulmonary aspiration occurs during eating and drinking, the aspirated material is often colloquially referred to as "going down the wrong pipe." Since the right main bronchus is more vertical and has a slightly wider lumen than the left, aspirated material is more likely to end up in this branch or one of its subsequent bifurcations.
2. A medical procedure that removes something from an area of the body. These substances can be air, body fluids, or bone fragments

Cyanosis: Blueness of the skin resulting from insufficiently oxygenated blood in the arteries

Cheyne-Stokes respiration: A repeated cycle of irregular breathing that begins with shallow breaths that increase in depth and rapidity and then decrease and cease altogether for 15-20 seconds.

Cheyne-Stokes is normal in infants; it is also often seen just before death from pulmonary, cerebral, cardiac, or kidney disease.

Epistaxis (ep-i-STAK-sis): Commonly called a nosebleed. Loss of blood from the nose due to trauma infection, allergy, malignant growths, or bleeding disorders. It can be arrested by cautery with silver nitrate, electrocautery, or firm packing.

Hypercapnea (hypercarbia): Excess carbon dioxide in the arterial blood

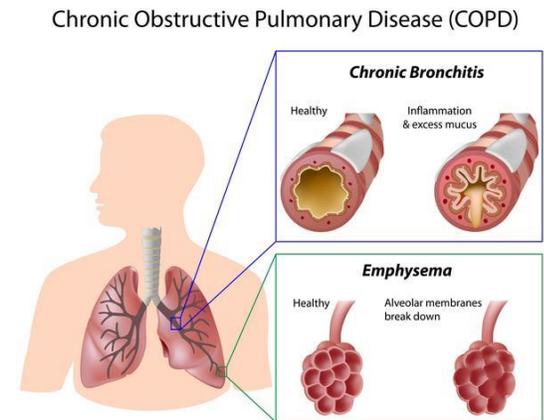
Hypocapnea (hypocarbia): Below-normal carbon dioxide in the arterial blood.

Sleep apnea: A disorder in which a person repeatedly stops breathing for 10 or more seconds while sleeping. Most often because of loss of muscle tone in pharyngeal muscles allows the airway to collapse.

Sudden infant death syndrome (SIDS): Leading cause of death in the first year of life. Although the cause of SIDS is still under investigation, most evidence suggests that the baby has periods of prolonged apnea because the respiratory control mechanisms are immature, either in the brain stem or in the chemoreceptors that monitor the body's respiratory status. For example, on autopsy more than half the victims have poorly developed carotid bodies, the more important of the peripheral chemoreceptors. Abnormal lung development has been suggested as being responsible for some cases. Whatever the underlying cause, certain risk factors make babies more vulnerable to SIDS. Among them is sleeping position with a 40% higher incidence of SIDS associated with sleeping on the abdomen rather than on the back or side. It is now recommended that normal newborns be placed on their backs for sleeping: "Back to sleep". Exposure to nicotine during fetal life or after birth. Infants whose mothers smoked during pregnancy or who breathe cigarette smoke in the home are three times more likely to die of SIDS than those not exposed to smoke.

Chronic Obstructive Pulmonary Disease (COPD) refers to a group of lung diseases that block airflow and make breathing difficult. Emphysema and chronic bronchitis are the two most common conditions that make up COPD. Chronic bronchitis is the production of increased mucus caused by

inflammation. Bronchitis is considered chronic if you cough and produce excess mucus most days for three months in a year, two years in a row. Emphysema occurs when the air sacs (alveoli) at the end of the smallest air passages (bronchioles) in the lungs are gradually destroyed. In the vast majority of cases, the lung damage that leads to COPD is caused by long-term cigarette smoking. But there are likely other factors at play in the development of COPD, such as a genetic susceptibility to the disease, because only about 20 percent of smokers develop COPD. Other irritants can cause COPD, including cigar smoke, secondhand smoke, pipe smoke, air pollution and workplace exposure to dust, smoke or fumes. Over time, breathing these substances irritates the airways and destroys the alveolar walls in the lungs. It usually takes many years for the lung damage to start causing symptoms, so COPD is most common in people who are older than 60. People who get emphysema in their 30s or 40s may have a disorder that runs in families, called alpha-1 antitrypsin deficiency. Damage to your lungs from COPD can't be reversed, but treatment can help control symptoms and minimize further damage.



Use of Oxygen Therapy in the treatment of COPD

Care needs to be exercised in patients with COPD, especially in those known to retain carbon dioxide. Such patients may have increased carbon dioxide (**hypercapnea**) and decreased blood pH levels. This situation could actually cause the patient to reduce or stop their breathing with the administration of oxygen. In a healthy patient, respiratory drive is initiated by increased carbon dioxide (PCO_2) levels but in chronic obstructive pulmonary disease (COPD) **hypoxia** (reduced oxygen) can become a major driving force. Giving oxygen may reduce their drive to breathe due to a **reduced hypoxic drive and the patient will have a reduced breathing rate**. In the COPD patient, the central and peripheral chemoreceptors for CO_2 and pH have become less sensitive to their changes **leaving low oxygen levels as the main stimulus for respiration (hypoxic drive)**. Hence, giving supplemental oxygen will increase O_2 levels and reduce their stimulus to breathe, causing respiration to slow (hypoventilation), and allowing carbon dioxide to accumulate and reduce blood pH levels (acidosis).