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Gas Exchange Reflection

Tuberculosis is caused by mycobacterium tuberculosis and is an infection of the lungs. It is contagious and can rapidly spread to other organs. Tuberculosis is one of the oldest diseases and a leading cause of infection and death in adults. BCG is a vaccine available to prevent TB. If contagious droplets are large, they become embedded in proximal airways and do not cause any infection. When droplets are small, they are able to reach the lungs and cause infection. Risk factors for TB include, exposure to infected person, working environment, foreign country/travel, and immunosuppression. COPD encompasses two different chronic lung diseases, emphysema and bronchitis, which hinder breathing by limiting lung airflow and becoming severe with time. COPD is the fourth leading cause of death in the United States. Early screening is key to prevent major loss of lung function. Causes of impaired gas exchange from COPD include, clogging of air passages due to mucus, inflammation or thickening of the walls of air passages, damaged alveolar walls, and or, alveoli and air passages losing their stretching ability. With Emphysema the damage takes place within the alveolar walls. With Chronic Bronchitis the lining of air passages are clogged with mucus. Risk factors and causes of COPD include, smoking, exposure to irritants, pollution, and genetics. Common symptoms for COPD include, persistent cough for three or more months with production of mucus which gets worse during the early mornings, dyspnea, frequent respiratory infections, tightness in chest, wheezing, and fatigue. Spirometry is used to confirm and diagnose COPD. Chest CT and XRays are also used to diagnose COPD. Excess weight can lead to an obstruction in the airway that can cause sleep apnea. During sleep the obstruction causes periods of apnea causing the person to wake up in order to open the air way and take a breath. Rem sleep causes it to be worse. Risk factors for sleep apnea include gender/males, obesity and recent weight gain, race, nasal obstruction, and genetics. Pneumonia is a disease which occurs when the alveolar sacs of the lungs become filled with fluid due to inflammation and causes difficulty breathing. Types of pneumonia are classified on the area of the lung affected or how it was contracted. Initial steps of diagnosing pneumonia include analyzing medical history and a physical examination. Lung sounds with pneumonia could be diminished or could include crackling or wheezing. Other diagnostic tests used to confirm pneumonia include sputum test and blood test. These tests help determine the best antibiotic treatment for the variant of infection. CT scans and XRays are also used to confirm fluid and inflammation in lungs and show location. Bronchoscopy is preferred in cases where antibiotics are not effective to collect tissue sample. Core measures of treatment for pneumonia usually include, drawing blood prior to administering antibiotics and delivery of antibiotics within the first six hours following the diagnosis. Chest tubes are inserted into the pleural space of the lungs to remove air or fluid and help the lungs re-expand. Reasons for a chest tube include, pneumothorax, pleural effusion, hemothorax, empyema, chylothorax, or cardio surgery. Types of chest tube drainage systems include, wet and dry suction.