

Gas Exchange Reflection Paper

Tuberculosis is a contagious bacterial infection of the lungs. It is highly contagious and is spread through airborne particles. People with weakened immune systems are more likely to contract Tuberculosis. There are antibiotics designed to treat Tuberculosis. A person may have an inactive form of Tuberculosis, which is not contagious, but the disease can become active at any time. A weakened immune system can increase the chances of an inactive form of Tuberculosis, to become active. Some symptoms of Tuberculosis are coughing up green or yellow sputum, chest pain, coughing up blood, poor appetite, fever, and fatigue. Tuberculosis starts in the lungs, but can spread to the bones, kidney, spinal cord, brain and lymph nodes. Medications used to treat Tuberculosis are, Pyrazinamide, Rifampin, Ethambutol and Isoniazid.

The two types of COPD are Emphysema and Chronic Bronchitis. Emphysema is mainly damage to the alveolar walls. The total surface area for gas exchange in the alveoli is reduced causing the volume of air exchanged to decrease as well. Chronic Bronchitis causes the lining of the air passages to get clogged with mucus due to inflammation. Chronic Bronchitis and Emphysema commonly occur together. Smoking is the most common cause of COPD. Bronchodilators can be used to reduce the symptoms of COPD by helping to open up the bronchi in the lungs. Inhaled steroids can help reduce the inflammation of air passages.

Obstructive Sleep Apnea causes a person to stop breathing in their sleep because of an obstruction. The muscle of the tongue can relax in the back of the throat when a person is sleeping and cause an obstruction to the airway. Once this happens there is basically no air flow to the lungs which causes the brain to arouse and tighten the muscles in the throat so air can get through then the brain goes back to sleep. This cycle causes a constant fluctuation of oxygen saturation in the blood. Being supine or in REM sleep can cause Sleep Apnea to be worse. Men are more prone to having sleep apnea than women. Obesity is another risk factor of Sleep Apnea. Nasal obstruction, genetic factors and race can also affect the risk for Sleep Apnea.

Pneumonia causes the alveoli in the lungs to have pus or fluid due to inflammation. Pneumonia is more difficult to overcome for newborn babies, children under the age of two, elderly people, smokers and those with weakened immune systems. There are different types of pneumonia based on the infected area of the lungs. Common symptoms of pneumonia are, coughing, irregular sputum, fever and chills, shortness of breath, chest pain, muscle pain, diarrhea, nausea, vomiting, and cyanosis that is caused by the blood not being well oxygenated. Sputum and blood tests can be used to detect the presence of pneumonia in a person's lungs. Chest X-Rays, CT scans and bronchoscopies are also used. It must be decided if the pneumonia is viral or bacterial so it can be determined which kind of treatment route the person needs. Antibiotics can fight fungal and bacterial pneumonia. If the infection is viral, antiviral medication must be used.

A chest tube is inserted into the pleural space to remove air or fluid to help the lungs re-expand. There are many reasons for a chest tube being placed. Some of the reasons are,

pneumothorax, pleural effusion, hemothorax, TB or cardiac surgery. There is a wet or a dry suction system for chest tubes. As the nurse, you should keep the drainage system and tubing below the patient's chest, monitor the collection chamber for the color and amount. Monitor the water seal chamber if the drainage system has one. Monitor the lung sounds and patient's breathing as well.