

Tuberculosis is a bacterial infection of the lungs. It is considered the oldest disease known to humans. Tuberculosis is highly contagious and is spread from person to person through air. A person is more likely to contract tuberculosis from traveling or visiting and living in poor conditions. Weak immune systems are more prone to getting this disease because they can not fight off infection as well as a strong immune system. Inactive TB is considered to not be contagious in a strong immune system, but it can become active if the immune system weakens at any time. Active TB symptoms include, chest pain, cough or malaise. Chest x rays and sputum samples are used to detect TB. Getting vaccinated helps prevent this bacterial infection.

COPD consists of two lung diseases that hinder breathing by limiting lung air flow. The two lung diseases are emphysema and chronic bronchitis. For emphysema, the main damage is located in the alveolar walls. For chronic bronchitis, the air passages become clogged with mucus due to inflammation. COPD is also considered the 4th leading cause of death in the United States. The alveoli in the lungs are the main site of gas exchange between oxygen and carbon dioxide. Causes of COPD include, smoking and inhaling dust or chemicals. The leading cause is from smoking. A genetic condition called AAT can also cause COPD, but it is rare. Some signs and symptoms are cough, dyspnea, wheezing, and chest tightness. An ABG, spirometry test and chest x rays are used to diagnose COPD. Early screening is important if a person suspects they may have the disease. Medications and quitting smoking are two ways to treat COPD.

Obstructive sleep apnea results from a person who has stopped breathing during sleep because of an obstruction. This obstruction is usually in the back of the throat where the tongue, fat or muscles block the airway. During this process, oxygen levels decrease and resistance increases. Oxygen increases and decreases as a pattern. When the lungs are not getting oxygen they send a signal to the brain and the throat then opens allowing air to go through. Once the brain goes back to sleep, apnea occurs again in a cycle. Being in a supine position and REM sleep makes obstructive sleep apnea worse. Some risk factors include, being male because men store more fat in their neck than women, obesity, race, genetics, age, and nasal obstruction. A person sleeping on their side could help prevent obstructive sleep apnea.

Pneumonia occurs when the alveoli in the lungs fill with pus. There are certain groups of people who are more sensitive to the infection such as newborns, children under the age of two and the elderly. There are different types of pneumonia. Bronchial pneumonia is the inflammation of the bronchial tubes. Lobar pneumonia is when several lobes of the lungs are infected including all alveoli. Opportunistic pneumonia happens when the immune system is weakened. Aspiration pneumonia is caused from a person aspirating on objects such as food and getting a bacterial infection from it. Some signs and symptoms include, shortness of breath, coughing, chest pain, and D,N,V. For diagnosis of pneumonia a nurse would listen to the patient's lungs, do a sputum and blood test, chest x rays and a bronchoscopy if needed. Antibiotics are usually the treatment for this infection. Washing hands, diet, exercise, vaccinating and not smoking are ways to prevent becoming infected with pneumonia.

Chest tubes are inserted into the pleural space to remove air or fluid from the lungs to help expand them. A mediastinal chest tube, located under the sternum, can be used to drain fluid from around the heart specifically after cardiac surgery. There are a variety of reasons for a patient to need a chest tube. Pneumothorax is when air enters the pleural space. Pleural effusion

is when fluid enters the pleural space. Hemothorax, empyema, and chylothorax are all examples of a pleural effusion. There are two types of chest tube drainage systems. The first is called a wet suction drainage system. The suction is regulated by the height of water in a suction control chamber when connected to wall suction. The other is called a dry suction drainage system. This system does not have a water column, but uses a suction monitor bellow that balances wall suction. It is the nurse's responsibility to make sure these systems are below the patient's chest. The nurse also has to monitor the suction control chamber as well as the water seal and collection chambers.