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Gas Exchange

I learned about the signs and symptoms, diagnosis, and treatment for each disease after watching the five videos about various lung diseases and chest tubes. The four I learned about were, Tuberculosis, COPD, sleep apnea, and pneumonia. In the last video I also learned about chest tubes and why some patients need them. I'm first going to talk about what I learned about Tuberculosis. Tuberculosis, also known as TB, is a bacterial infection that affects the lungs and often affects the kidneys, bones, and brain as well. TB is transmitted through air when an infected person sneezes, laughs, or coughs. Because tuberculosis is spread through the air, you are more likely to contract it from someone you spend a lot of time with or from someone who is in the same room as you. Being exposed to someone with tuberculosis, working/traveling/living in areas where tuberculosis is more prevalent or widespread, and having a weakened immune system are all risk factors. People with a weak immune system are not able to fight the infection and stop the bacteria from multiplying/growing. TB can be active or inactive (latent). People who come in contact with TB that also have a strong immune system can have an inactive form of TB. These people have no symptoms and are not contagious, however the TB can become active at any time especially when the person's immune system weakens. If untreated, active tuberculosis can be fatal. A productive cough lasting more than three weeks, night sweats, fever/chills, and coughing up blood are all signs and symptoms of active tuberculosis. TB can be diagnosed using chest x-rays, sputum culture examinations, IGRA tests, and TST tests. Multiple antibiotics are used in treatment, and they can be toxic to the liver, so the patient should be aware of any signs of liver failure. The patient needs to complete the full course of drugs for them to work. Another video I watched was over Chronic Obstructive Pulmonary Disorder or COPD. COPD is the 4th leading cause of death in the United States. COPD is a progressive disease and an umbrella term for two types of lung disorders, Emphysema and Chronic Bronchitis. Emphysema is caused by damage to the alveolar walls while chronic bronchitis is caused by the lining of the air passages being clogged with mucus phlegm (due to inflammation). COPD is caused by inhaling pollutants, smoking cigarettes, and genetics can also play a role. Some signs and symptoms include, persistent cough for 3 or more months (with thick mucus production), dyspnea during physical activities, frequent respiratory infections, and wheezing. People with advanced COPD have difficulty catching their breath and talking as well as having cyanosis and weight loss. To diagnose COPD, spirometry testing is the number one test for diagnosis but chest x-rays and x-rays are also used. COPD is irreversible but lifestyle changes and medications can slow down the progression of the disease. Smoking cessation is also recommended for COPD patients, as is joining a support group. Sleep apnea is a condition that causes many people to wake up tired and angry. This is due to a lack of oxygen in their bodies during the night. Our muscles relax when we go to sleep, so we don't move or try to act out our fantasies. Since our tongues are a muscle they also relax while we are sleeping so they can obstruct the airway and cause us to go for short periods without getting any oxygen. Some risk factors for sleep apnea are, obesity, nasal obstruction, genetic predisposition, and males because men store more fat in their necks than women do. People with sleep apnea usually end up using cpap or bipap machines while they sleep. Pneumonia is a lung infection that affects the alveoli. People who are more at risk are: new born babies, elderly, regular smokers, and people with weak immune systems. Some common signs and symptoms are coughing with sputum production, sweating, fever/chills, and muscle weakness. A sputum blood test or a chest x-ray may be used to diagnose pneumonia. Antibiotics are administered to the patients in order to treat the infection. Chest tubes are tubes that are inserted into the pleural space of the lungs and are used to remove air or fluid. A chest tube may

be used to expel air from the pleural space of the lungs in patients who have a pneumothorax. In some trauma situations, patients can get blood in their lungs, aka a hemothorax, they may also need a chest tube to drain the blood/fluid from their lungs.