

Elias Lozano (IM3)

02/16/21

Week 1 Gas Exchange Videos Reflection

From what I've learned as of now, Tuberculosis is an infection of the lungs caused by the bacteria *Mycobacterium Tuberculosis*. This is a very serious condition that simply starts in the lungs and has the potential to infect the lungs. There are two forms of TB, inactive where healthy immune systems do not allow to grow and active where signs and symptoms are present. Active TB signs include productive cough for 3 weeks or more with green or yellow sputum when waking up in the morning. Also, chest pain, poor appetite, fever/chills, night sweats, and even hemoptysis or coughing up blood. Main risk factors of TB include close contact since it is contagious via air borne droplets, people with weak immune systems, and large populations such as nursing homes or prisons. Although the BCG Vaccine exists, 1/3rd of the world still struggles with this preventable disease sadly. If you have inactive TB you may be prescribed meds such as Rifampin, or if you have active TB you may get Pyrazinamide or many others for both.

COPD is also another major disease process, that obstructs and limits airflow. The alveoli is the main place where gas exchange takes place, however this disease may clog airflow, mucus production from inflammation, emphysema, and chronic bronchitis all limit air passage from the lungs. Smoking is a main factor and cause for this but also if you work in a dusty environment or fumes are present as well. Although this is not curable, it can be treated with meds such as bronchodilators (short and long acting), inhaled steroids, lung therapies, or even surgery if needed (Bullectomy).

Sleep apnea is simply where a person stops breathing for a period of time. I learned this is primarily caused by fat storage of tissue that obstruct air in the back of the throat. When this happens, O₂ levels will drop until they are aroused again and wake up, then it will repeat through out most of the night causing a up and down chart for the O₂ levels. Some signs this maybe happening to a you is if you snore loudly, feel tired after full night sleep, insomnia, dry mouth, etc. Two of the most dangerous risk factors for sleep apnea would be supine position and REM sleeping together is not a good mix at all.

Lastly, Pneumonia which can be caused by a multitude of things but all of which cause inflammation of the alveoli and therefore making it hard to breathe. If there is liquid in the lungs it will be heard via crackles in the lungs. To help for this, a chest tube may be placed to drain it and prevent the lungs from collapsing. Chest X- rays and CT Scans help to see if the lungs are filled with fluid as well. Some treatments depending on source include antibiotics for fungal/bacterial or anti-viral meds for viruses that infect the lungs. Knowing some of these can be avoidable its important to keep up to date on vaccines and avoid smoking at all times and eat and exercise to maintain a healthy immune system as well.