

Gas Exchange HESI Summary

The first video I watched was over Tuberculosis. The video was very informative and help me understand deeper into the disease. I learned that disease can travel to any organ of the body, including the bones, traveling through the lymph nodes. The condition of TB traveling is called Extrapulmonary or Disseminated TB. The vaccine available (BCG) is a live, attenuated vaccine. Typically, a chest x-ray and sputum examination are the first tests done to determine TB in a patient. If TB positive, the chest x-ray will show white patches of bacteria on the upper lobes of the lung. For healthcare workers who are treating TB patients, a tuberculosis skin test (TST) is considered positive if the injection site grew to 5mm or more. The CDC has banned the use of Pyrazinamide and Rifampin being used together to treat tuberculosis, it can cause severe liver damage and death.

Chronic obstructive pulmonary disease (COPD) was the next video I learned from. COPD is actually the 4th leading cause of death in the US. It is not uncommon for chronic bronchitis and emphysema to occur together. Oxygen therapy is the only COPD therapy proved to lengthen and improve life. A pulmonary rehabilitation program may help reduce hospital stays and enhance a patient's quality of life. Surgery is an option to open more space in the chest cavity to allow for better lung quality. A bullectomy can be efficient by removing hardened tissue around the alveoli sacs. This video taught me useful information over the different treatments for chronic obstructive pulmonary disease.

Obstructive sleep apnea, video three, described how the throat muscles can become "flabby" and close up the trachea during sleep. The O₂ Saturation continues to dip and rise all through the night. REM sleep can make sleep apnea worse because the body is paralyzed during that time, making the throat muscles relaxed. Men store fat in the neck more than women, making them more at risk for sleep apnea. Any type of nasal restrictions can increase your chance, along with genetics. The ages 50-59 are also at greater risk for developing sleep apnea. Overall, there are many different factors that can result in obstructive sleep apnea and it is useful to be aware of them all.

Second to last is pneumonia. From the video I learned Pneumonia can be broken down into classifications based on where the pneumonia is located in the lung, bronchial pneumonia and lobar pneumonia. Besides hospital acquired and community acquired pneumonia, there is an opportunistic pneumonia, developed from a weakened immune system. The different organisms that can cause pneumonia, viral, bacterial or fungal, can greatly change a patient's symptoms and severity of the infection. Pneumonia can travel to organs through the blood, called bacteremia.

The last video I reviewed was over Chest Tubes. I learned that a mediastinum chest tube is placed under the sternum to drain fluid after a cardiac surgery. A chest tube can be placed to drain an infection in the pleural space, called an empyema. A drainage system with wet suction will give off a sound of bubbling and minor bubbling when it is working properly. A dry suction offers a higher suction rate. With a wet suction, the water can evaporate from the tube so it is important to make sure the water level is always at the amount prescribed. The water seal chamber works to remove air from the pleural space. It is very important to accurately and regularly monitor the drainage amount and color. During removal, the Valsalva maneuver is used to prevent air getting into the pleural sac while the site is open to air for a short period.