

## TB, COPD, Sleep Apnea, Pneumonia, and Chest Tube

Reflecting on the YouTube videos, I have learned about the different processes of each topic listed above. The first disease process I have learned from the videos is Tuberculosis. This bacterium, known as mycobacterium, resides in the lungs. Tuberculosis, known as TB, is an airborne/droplet bacterium that can be spread from person to person. This highly contagious disease can be spread by an infectious person to a healthy person by sneezing, coughing, and laughing. Being in close contact or living with someone with the active disease becomes a higher risk. Others that are at higher risk are the ones who experience malnutrition that is found in other countries, people who work or reside in nursing homes, the homeless, and even prisons. This is contributed by insanitary places and the abundance of overpopulated locations. This can also affect individuals who are immunocompromised. After some time, the small bacteria are inhaled by the respiratory tract and the droplets pass our defense mechanism and can lead to an infection. This is when the bacteria can become embedded in the lower part of the lungs. Now it is able to spread throughout the lungs if the immune system does not fight off the infection properly. TB is an infectious disease that can be spread to other parts of our body. The other organs that can be affected is the brain, kidneys, lymph nodes, and bones. Mycobacterium can be spread to these organs by the blood stream. This is very rare. TB is different from other disease processes because even if you are exposed to TB it does not mean you will become ill right away. For example, inactive TB is when a person cannot transmit the bacteria and means that they are not contagious. This means that the immune system is fighting the infection by not allowing the bacteria to spread. Overtime a person's immune system can become weak and the bacteria can begin to spread which can lead to active TB. The risk of active TB can become fatal and which signs and symptoms need to be taken seriously. Signs and symptoms can be shown by a productive cough that last three weeks or more by the individual, chest pain, coughing up blood, and fever or chills. Extensive measures are initiated with a person of inactive TB and active TB. This can be multiple test that are conducted that provide results to the individual. The results provided may need to be followed by medications if the individual is contagious or even exposed to TB. Another interesting disease process is known as Chronic Obstructive Pulmonary Disease, known as COPD. This disease process is an overall term for the two specific categories that lead to the overall term of COPD. The first term is Emphysema. The main damage is taken place in the alveolar walls. This is when the alveolar walls become disturbed. This leads to the destruction of the alveoli and creates a decrease of gas exchange. Overall, the lungs ability to function decreases because of the sacs becoming destroyed and not being able to recreate. Now the individual is having a harder time to breathe. The second term is Chronic Bronchitis. This is when the lining of air passages become clogged due to the sufficient production of mucus. Now that the air passages are clogged it becomes irritated and which indicates swelling. Now the individual is having a harder time to breathe. This is why COPD is used for both terms. The main factors that cause COPD is the inhalant pollution of cigarette smoke. This is the main cause of COPD. The best prevention of COPD is to never smoke or to quit smoking. COPD can also be caused by fumes, chemicals, and dust from working environments. This is a progressive disease which the signs and symptoms may not be present in the early stages. The most common sign and symptom includes a productive cough for three or more months with mucus present and shortness of breath. This is

a horrible disease because the damage is irreversible. The next topic that was learned was Pneumonia. This disease process can contribute to multiple factors. The ways that classify pneumonia can be the part of the lung that is infected or how the infection was acquired. For example, the acquired infection can be received from a community area, hospital, or being on a ventilator. This infection/virus effects the lungs. The main factor of pneumonia is the influenza virus. There are many other viruses/bacteria that can cause pneumonia. To determine the difference between bacteria and a virus with pneumonia is the color of the sputum production. This is a major sign and symptom of pneumonia. With bacteria pneumonia an individual will experience the color of the sputum to be a yellow or green; other colors can be presented as well. With pneumonia being a virus, an individual may experience a thinnish white color. Another difference between the two is that bacteria is seen with more production of fluid and the virus is more prone to inflammation of the lungs. There are types of diagnosis test to determine the specific organism that is causing the infection. A sputum and blood test can determine these types of results. As a nurse to determine the results of pneumonia is drawing for blood cultures prior to antibiotic treatment. This is a standard procedure to receive accurate results. Following the hospitals protocol is important as well. The next topic I learned from the videos is chest tubes. The chest tube is inserted into the lung(s) of the pleural space to remove fluid such as blood or air. The chest tube is place is to drain the fluid inside of the cavity to prevent the collapse of a lung(s). Trauma or spontaneous events can cause an individual to receive a chest tube. The type of chest tube drainage systems used are wet suction or dry suction. The difference between the two is that the wet suction is filled with water within the suction control chamber. The height of the water will regulate the pressure of the fluid that is excreted from the patient. You will see bubbling or hear bubbling in the suction control chamber. This is a sign of the system working properly. For the water seal chamber, the nurse should not see bubbling. This can indicate a leak. The dry suction is different because of the system not having a suction control chamber. The dry suction will have a suction monitor bellow. The bellow will expand to indicate the regulating of the suction. Instead of using water for the dry suction, the device has a dial that the nurse can set for the amount of pressure that is needed for the patient. Both will have a water seal chamber. As a nurse you will need to monitor the patient's respiratory status and the drainage system closely. The last topic I learned while watching these YouTube videos is sleep apnea. Sleep apnea is when an individual has an obstruction while sleeping and begin to stop breathing. This can be caused by tissues in the back of the throat that are enlarged by fat. The reason for this issue is when you are asleep your muscles also go to sleep. The obstruction causes oxygen not being able to get in or out. As a result, the brain is signaled to arise the individual when oxygen saturation begins to drop. Now that a breath was executed the brain falls back asleep and the process is repeated throughout the night. Sleeping in supine position can make sleep apnea worse. One of the risk factors of sleep apnea is being male. Men store more fat in the neck which can cause sleep apnea. Other factors include obesity, race, nasal obstruction, age and genetic factors.

These videos overall helped me have a better understanding of each process mentioned above. I enjoy having outside resources to help connect the dots.

