

Gas Exchange

Reflecting back on the videos I have watched; I have learned that most of these respiratory diseases can be prevented. Some of them may cause permanent damage, but you have the capability to manage the disease and live a long life if you are able to react fast enough and start treatment immediately. I also feel like these videos really shed some light on how important vaccines are to us, especially those who have chronic diseases that compromise their immune systems.

The first video I watched was Tuberculosis also known as TB. TB is one of the oldest diseases among human population. With TB we have a vaccine BCG but is rarely used only on those who live with someone, who is infected and the person is not able to take antibiotics. With TB there are many stages that you can have TB and depending on what stage you have depends on the course of treatment. You can have a latent or inactive stage or even an active stage. Each stage has a severity of how contagious or not contagious the patient can be. Though this disease is the oldest it still has a Morbidity Rate in some countries. Highly contagious and passes through Airborne droplets from one infected individual to another individual. Sneezing, Coughing and laughing is how it can be passed. Infection occurs when small particles cross the upper respiratory defense reach the lungs where they are planted in the subpleural spaces of lower and middle lobes then spread through the lungs. Anyone can get it, through working, traveling, develops within a few weeks. You will present with a productive cough for 3 weeks, needs to be taken care of. We can usually test by TST, which is skin test along with IGRA, Sputum, chest X-ray. TB can be treated with some really strong antibiotics but you really have to watch for side effects these meds can be very harmful to the liver as well certain meds can be mixed together.

COPD, is a broad name used for two different kinds of Lung Disease. Fourth leading cause of death. Early screening is key for these diseases, damage is Irreversible. Though you can have a good life if caught early and able to get on medications along with lifestyle change. Pathophysiology with COPD, clogging of air passages due to mucus, Inflammation or thickening of the walls or air passages, damage to alveolar walls, alveoli and air passages losing their stretching ability. The first disease is Emphysema, main damage takes place in the alveolar wall reduces total surface area for gas exchange. The Second is Chronic Bronchitis, lining of air passages are clogged with mucous due to chronic inflammation. With COPD, this can all be preventative by not smoking which is most common related cause even second-hand smoke, Pollutants, or air pollutions, there is a hereditary and genetic disposition some people can have its very rare. It's called Alpha 1 Antitrypsin Deficiency which you could be tested for. This is very progressive disease so it takes a while for you to have it. You will usually have a persistent cough 3 or more months, Productive in the AM, Barrel Chest, Cyanosis around the lips, Clubbing and pedal edema. You can diagnose by Medical history, PFT, CXR, ABG. The disease can be managed.

Obstructive Sleep Apnea, your breathing stops for a brief period of time. The muscle in the mouth and pharynx relaxes too much, so tongue drops on soft tissue so this blocks complete oxygen getting into your lungs. Lack of oxygen will wake you up so you will gasp for air and wake you up, so it prevents restful sleep. Many factors that may contribute to this so obesity, small or receding jaw or loss of muscle tone in pharynx and swollen tonsils. Signs and symptoms

are snoring, morning headaches, chronic daytime, fatigue, irritability. Which can lead to High Blood pressure, heart disease, stroke, diabetes. Life style changes are good sleeping on side losing weight, stay away from smoking or alcohol. Along with a CPAP machine will be prescribed to help patient breath better.

Pneumonia, sometimes around the alveoli pus and fluid are surrounding it. Causing it hard to breath. Pneumonia is easy to overcome for a healthy individual. Certain groups that can't handle pneumonia such as Newly born babies and children under the age of 2. Elderly people 65 years and up, regular smokers and weakened immune systems. Certain Medical conditions classify pneumonia by the lung that is infected. Lung infected such as bronchial and lobar classified based on how the Infection is acquired. For instance, can be community hospital or aspiration. Types of pneumonia bronchial pneumonia, Lobar pneumonia is dependent on the lobes 1 of the 5 are infected. So, you can get HAP, hospital acquired pneumonia which is more severe due to the fact the patient is already here for something else. Community acquired pneumonia also known as CAP, which is given by social surroundings. Then you can have ventilator associated pneumonia also known as VAP. Why it's important to use sterile technique when messing with tracheostomy. Aspiration pneumonia so can be due to inhaling foods, saliva, liquid. There are many types of causing pneumonias. Signs and Symptoms coughing, can include sputum and fever and shivering chills, shortness of breath and cyanosis. Diagnosis is by sputum and blood test along with Xray and as well sputum test and CT scan and Bronchoscopy, oxygen saturation. Follow core measures depending on the facility to treat the pneumonia. So blood cultures and antibiotics need to be started. Risk is higher for those who don't get treated and as well those who have other issues going on. Can be prevented by Proper hygiene, staying healthy and physically sound, balance diet, quit smoking. Vaccination is another one that can help to prevent.

Chest Tubes there are many different types and uses for them. I didn't realize after surgery they will place tube in the mediastinum space for that. I also assumed it was just in the chest area. A Chest tube is a tube that is inserted to the pleural space of the lung to remove air or fluid and helps re-expand the lung. When there is air or fluid in the pleural space it causes pressure and can cause the lung to collapse. The mediastinum chest tube is to remove fluid from around the heart to prevent cardiac tamponed that can occur after cardiac surgery. The two types of chest tubes are wet and dry suction. Wet suction is regulated by the height of the water in the suction control chamber when its connected to the wall suction. In a dry suction chest tube the suction is controlled/ monitored by a suction monitor bellow that balances the wall suction and can adjust the wall suction with the rotary dial on the suction chamber. If you see continuous bubbling in the water seal then there could be an air leak. The biggest thing you want to do when caring for a patient with a chest tube you must monitor the patient's respiratory status and the chest tube system itself. Make sure the suction chamber stays below the chest at all times and that the tubing stays unkinked.