

TUBERCULOSIS- is a infection of lung caused by bacteria called mycobacterium tuberculosis. It is a contagious bacterial infection that begins in the lung and can pass to any organ of the body. It often affects the kidney's, bone and brain through the lymph nodes or the blood stream. Today Tuberculosis is one of the leading causes of infection in adults. One third of the world's population are suffering even though there is a live vaccine called BCG available. It is highly contagious and can spread through any respiratory act such as coughing, laughing, talking, or sneezing. A person who has TB and is not having symptoms is called latent or inactive form. A person who has inactive still has the infection and is not contagious but can start to grow if the person gets weak. If the person has diabetes, HIV, or cancer the TB can become active again. There are several tests to diagnose skin tests such as chest x-ray, sputum testing, culture, IGRA, TST test.

CHRONIC OBSTRUCTED PULMONARY DISEASE or (COPD) is a term used for two different chronic lung diseases that hinder breathing by limiting lung airflow & becomes sever over time. It is the fourth leading cause of death in the US. Early screening is the key to diagnosing someone with COPD. In COPD the air inhaled and exhaled are hindered due to clogging of air passages due to mucus. Inflammation or thickening of the walls of air passages, damaged alveolar walls. Alveolar and air passages losing their stretching ability. There are two types of COPD Emphysema and Chronic Bronchitis. In Emphysema the main damage takes place in the alveolar walls. In Chronic bronchitis the linings are clogged with mucus and hinders breathing. It is common for emphysema and chronic bronchitis to occur together. Mostly caused by inhaling pollutants. Smoking, smoking pipes and secondhand smoke, chemicals, fumes, and dust. However, smoking is the number one common cause of COPD.

SLEEP APNEA- The back of the tongue is where you store fat. When you sleep your tongue drops back and the back of the throat becomes flabby and obstructs the airway. Therefore, dropping your O<sub>2</sub> and increases resistance. Then sends a signal to your brain to wake you from sleep. Then you start breathing again. Being supine laying on your back makes the tongue fall backward and being in REM sleep makes sleep apnea worse because when you are in REM sleep your body is paralyzed therefore paralyzing your muscles that you are using to keep your airway open.

PNEUMONIA— when alveoli and the surrounding tissue due to inflammation of the alveoli these tissues get filled with fluid and and pus causing pneumonia and making it difficult to breathe.

There are several types of pneumonia there is bronchial pneumonia where one or both lungs are infected with inflammation. Lobar pneumonia is when one or more of the five lobes of the lung are infected as well as all the alveoli in the affected lobe. HAP- or hospital acquired pneumonia is pneumonia acquired after being in the hospital for another reason. CAP- is community acquired pneumonia is acquired through social surroundings. VAP- ventilator acquired pneumonia is a type of pneumonia a patient may develop while on a ventilator.

CHEST TUBE- is a tube inserted into the pleural space to remove air or fluid from the lung. So that the lungs or lungs can continue to re-expand. Or it can be inserted into the mediastinum under the sternum to drain fluid from around the heart or after cardiac surgery. There are several reasons for a chest tube to be inserted. Pneumothorax, pleural effusion, hemothorax, empyema, chylothorax, or cardiac surgery. There are two drainage systems wet suction and a dry suction. The wet suction is regulated by the height of the water in the suction chamber. If you see and hear bubbling it is working. Dry suction it uses a suction monitor bellow to balance wall suction and you can adjust the water suction pressure on the side of system. Higher suction pressure level options no bubbling no water evaporation.