



Name: Madiha Yousuf

Student ID: 1911360

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Lecturer : Giridhar Katti

Anatomy of Lungs

The primary job of the lungs is to allow a body to breathe; lungs are located in the thoracic cavity on each side of the heart. It is nearer to the backbone, and the bottom of the lungs rest on the diaphragm sheet. Lungs main head is extended to the basis of the neck, which connects with the trachea (windpipe)(Lekeux and Art, 1994).



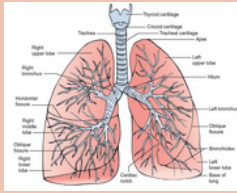
(Bailey, 2019)

Respiratory System

The respiratory system is one of the most vital structures and networks of soft tissues and organs that support the breathing process in the body. It has two sections for breathing the upper and the lower respiratory system. The upper structure consists of the nose, pharynx/larynx, and the lower system includes the trachea, bronchi and lungs.

Structure Of Lungs

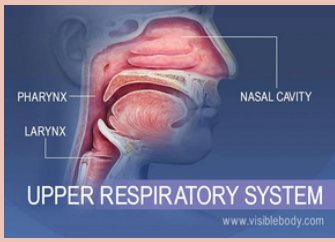
The lungs weigh around 1.3 kilogrammes and contain almost 2.5 kilometres of the airway (Protti. et al., 2015). The right lung is heavier and bigger than the left lung; the left lung is smaller because it needs to make space for heart adjustment. The right lung is divided into three lobes, and the left lung has two lobes. Fissures define the boundaries of these lobes; the right lung has two fissures, one oblique and one horizontal the left lung has only an oblique Fissure (Lekeux and Art, 1994).



(What-when-how, N.D)

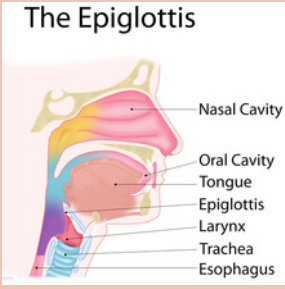
Breath Structure

The main structure of the respiratory system is when the air is breathed in and out from the nasal cavity, conchae (the shelf shaped) humidify the air, trap some air, pass through the pharynx/lynx (throat), and enter the trachea (windpipe) (Stocks and Hislop, 2002).



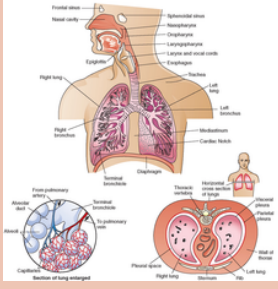
(Visible Body, 2021)

During the breathing process, the air goes from a little flappy structure called the epiglottis, which has an essential function during breathing it allows the air flows to go into the trachea (windpipe); however, when we swallow, it falls and blocks the trachea to prevent food or water from going in the windpipe (Stocks and Hislop, 2002).

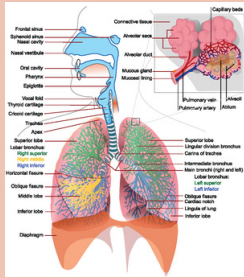


(The respiratory system, N.D)

The air goes down from the trachea, and through the bronchi, they travel to smaller bronchioles and then finally to their destination alveoli encircled by a group of capillaries (blood vessels). When the oxygen enters the alveoli system, the alveolar sac exchanges the gas through the capillaries (blood vessels). It gives their waste (carbon dioxide) and picks up the oxygen by emerging from blood vessels. When a person exhales, the carbon dioxide comes out from the air passage; after the gas exchange, the oxygen goes to the heart to provide the oxygen through blood vessels. (Baker, 2016).



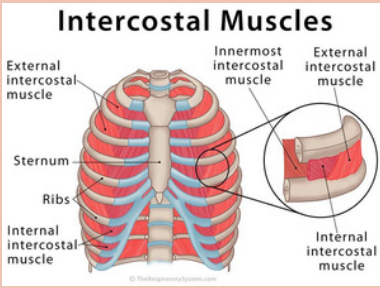
(Nurses Lab, 2021)



(Lumen Learning, N.D)

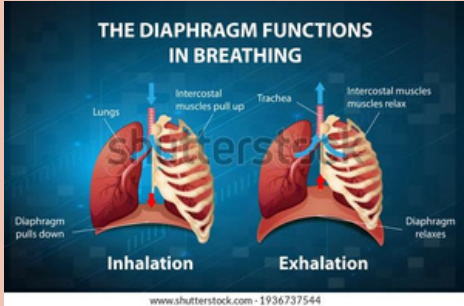
Intercostal Muscles

The intercostal muscles are a group of muscles in the chest wall, and these muscles fill the intercostal spaces. They help the ribs to move upwards and outwards and increase and decrease the size of the chest by taking out air pressure in the breathing process. The intercostal has three layers external, internal and innermost (Wilson et al., 2001).



(The Respiratory System, 2018)

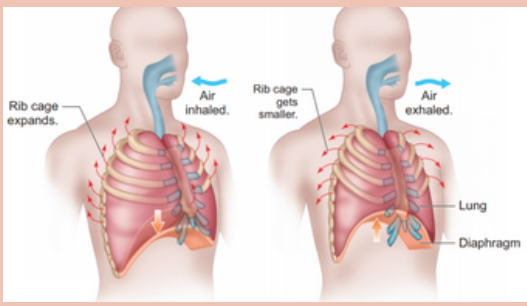
The diaphragm is placed underneath the lungs, and it is one of the major muscles in the respiratory system; it is a sheet of muscles that contracts during the breathing process. Therefore when a person inhales, it allows the chest cavity to expand, and when a person exhales, the diaphragm relax its position and the chest cavity gets smaller to push out the carbon dioxide (Pengelly, Alderson and Milic-Emili, 1971).



(Blue Ring Media, N.D)

Breathing Mechanic

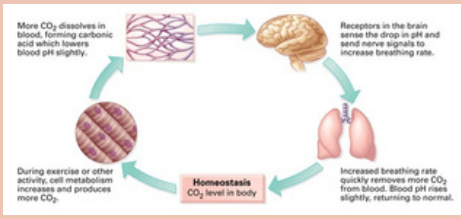
During breathing, the cycles involve taking air into the lungs called inspiration (inhale) and expiration (exhale); during inspiration diaphragm contracts and moves downwards, which makes the capacity for the lungs to expand. In addition, the muscles help the ribs enlarge in the chest cavity, and they contract to pull the ribs vertically and transversely movement in the thoracic cavity (Otis, Fenn and Rahn, 1950).



(Humagin, 2020)

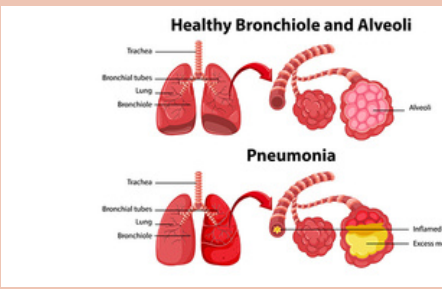
Respiratory system homeostasis

The respiratory system maintains the body homeostasis by providing oxygen and getting rid of carbon dioxide. In addition, this system helps with gas exchange and maintains acidity and alkaline balance, also known as PH levels. The respiratory system plays a vital role in other body systems to maintain homeostasis, such as:
Heart: respiratory system ensures that the carbon dioxide from the blood is exhaled out of the body and blood returning to the heart is oxygen-rich so the heart can supply it to other parts of the body to function correctly (Shalaby, 2019).
Digestive system: The PH levels maintained by the respiratory system also support digestive enzymes that help break food in the digestive system (Hamm, Nakhoul and Hering-Smith, 2015).



(Turn In Biology, 2011)

Pneumonia disorder is inflammation in the lungs caused by viruses, fungi, parasites or bacteria infections. When individuals inhale and catch these germs, they get in mucus and travel through the trachea, bronchi, bronchioles, and alveoli. Cilia (hair) in tubes constantly pushes back the germs from the airway, which makes a person cough. If germs pass through the bronchi and go into the alveoli, the immune system starts to protect the body by attacking the germs, which makes the body sick if the immune system is weak, it can overwhelm the immune cells. The immune system attacks the multiply germs, which causes inflammation and fill up with fluid in alveoli; it makes it difficult to breathe as the oxygen can not pass through because of the blockage in alveoli and the sack of capillaries could not make oxygen (Ainsworth and Hackett, 2004).



(Gajendran, 2019)

Health Interventions

According to Cohen et al. (2012), the risk of pneumonia can be reduced by providing adequate medical services such as HIV testing and providing appropriate awareness to the public regarding the pneumonia symptoms. Other interventions that can help are:

- Breastfeeding
- Reducing air pollution
- Good nutrition
- Taking supplements
- Exercise



(Melony, 2020)

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