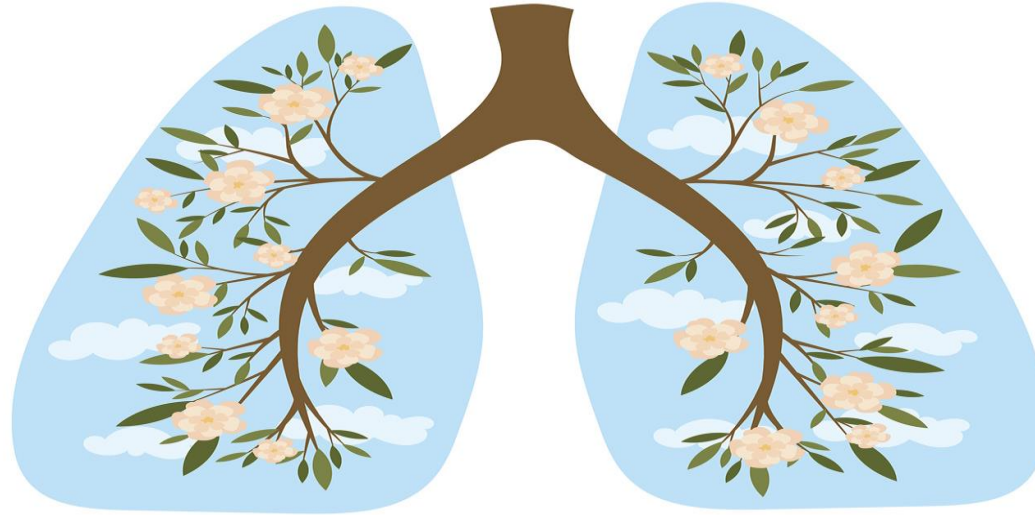


Respiratory system



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Nose and mouth passageways to the lungs Healthy people use both their nose and their mouth to breathe. Breathing through the mouth only becomes necessary when you have nasal congestion due to allergies or a cold.

Nasal cavity The sticky mucous membrane inside the nasal cavity traps dust particles from inhaled air, and tiny hairs on its surface push them away

Pharynx (throat) Inhaled air passes through the pharynx to reach the trachea. It also plays a role in shaping speech. The pharynx is a common organ for the respiratory and digestive systems. When swallowed, food also passes through here

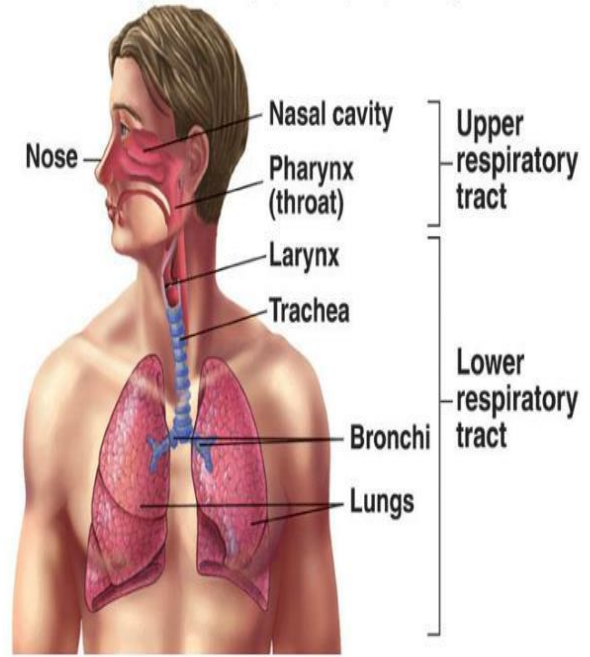
Larynx The larynx is the main organ for the formation of speech

Trachea The largest of the airways

Bronchi The trachea branches into two main bronchi, and then each branch into hundreds of smaller bronchi, forming a network through which air travels to all parts of the lungs.

The respiratory system is a set of organs and tissues that carry out the function of "breathing". All parts of the respiratory system work in sync to move oxygen from atmospheric air to all parts of the body and expel carbon dioxide, a waste product of cellular metabolism.

The Respiratory System

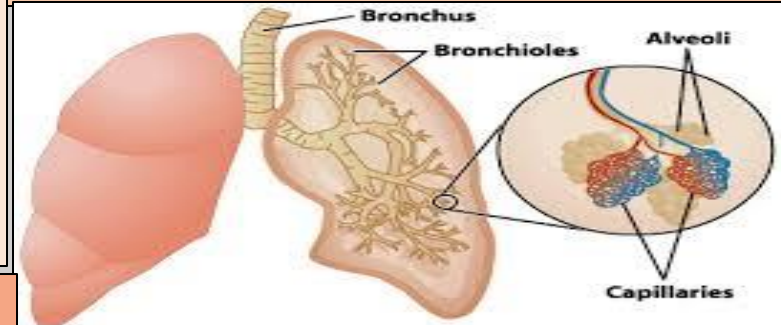


Bronchioles the main airways (bronchi) branch off into smaller and smaller passageways — the smallest, called bronchioles, lead to tiny air sacs (alveoli).

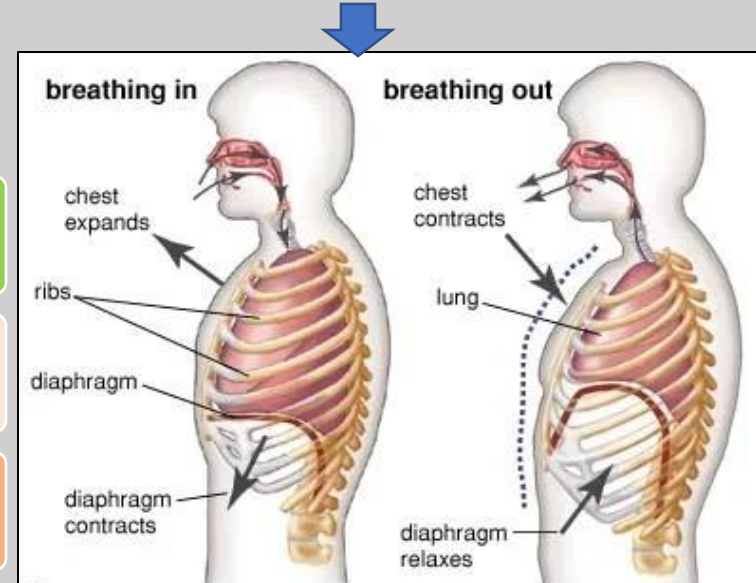
Alveoli are microscopic balloon-shaped structures located at the end of the respiratory tree. They expand during inhalation, taking in oxygen, and shrink during exhalation, expelling carbon dioxide.

Capillaries are blood vessels in the walls of the alveoli. While in the capillaries, the blood gives off carbon dioxide through the capillary wall into the alveoli and takes up oxygen from the air in the alveoli.

Lungs are the largest organ in the human body. Their main structural unit is the alveoli – small bubbles with thin walls through which many small molecules can pass. Their function is to carry out gas exchange - the transfer of oxygen from the air to the blood, which will carry it to all parts of the body. In the process of gas exchange, oxygen passes from the alveoli to the blood and carbon dioxide in the opposite direction - from the blood to the alveoli.



The mechanics of breathing



There are five functions of the respiratory system

Gas Exchange – oxygen and carbon dioxide

Olfactory Assistance – sense of smell

Breathing – movement of air

Sound Production

Protection – from dust and microbes

Smoking and Respiratory Disease

Over 72% of lung cancer cases in the United Kingdom are attributable to tobacco use, making it the leading cause of the disease. The link between smoking and an increased risk of lung cancer was first discovered in the 1950s. According to a significant UK study, those who smoked three cigarettes a day had a 6 times higher chance of developing lung cancer than those who smoked less than 20 cigarettes a day. Similar to this, a 2016 meta-analysis estimated that smokers are 11 times more likely than non-smokers to acquire lung cancer.



Around 1.2 million individuals in the UK are now living with COPD, which has the 12th greatest documented mortality toll worldwide. COPD is mostly brought on by exposure to either active or passive tobacco smoking, however it can also develop from occupational risks and air pollution. In addition to having a greater incidence of respiratory symptoms and impaired lung function, smokers also have a higher death rate.

Around 235 million people worldwide today have asthma, which affects individuals of all ages, races, and ethnicities. Low- and lower-middle-income nations are where asthma is most prevalent. Approximately 5.4 million individuals in the UK are now getting treatment for asthma, which equates to one in twelve adults and one in eleven children. People with asthma have delicate airways that are susceptible to several stimuli, including cigarette smoke. Asthma is known to be brought on by or worsened by exposure to cigarette smoke, either directly or indirectly.





REFERENCES