



The Importance of the Lungs in the Human Body

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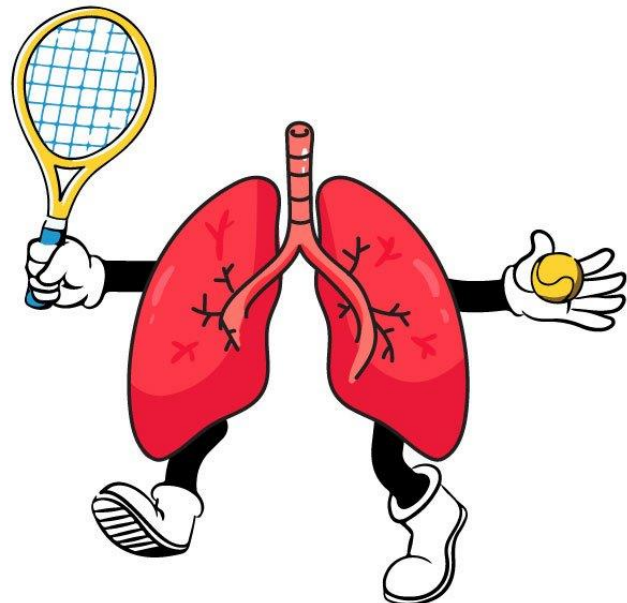
Abstract. This article examines the importance of the lungs in the human body. This field of medicine, chosen as a subject, is rapidly developing in accordance with the requirements of the present time. This article explains about the movement of gases in the lungs and the diseases that arise in the lungs.

Keywords: Human Body, Lungs.

Introduction:

The main organ of the respiratory system is the lungs. Lungs are paired organs, occupying the entire chest cavity, and their shape and size always change depending on the breathing phase. The left and right lungs are located in the front part of the chest and have a conical shape. The base of the cone touches the diaphragm from the lower side, and the tip is 3-4 cm above the first rib. 49 The right lung consists of 3 lobes, the left lung consists of 2 lobes. Three surfaces are distinguished in the lungs.

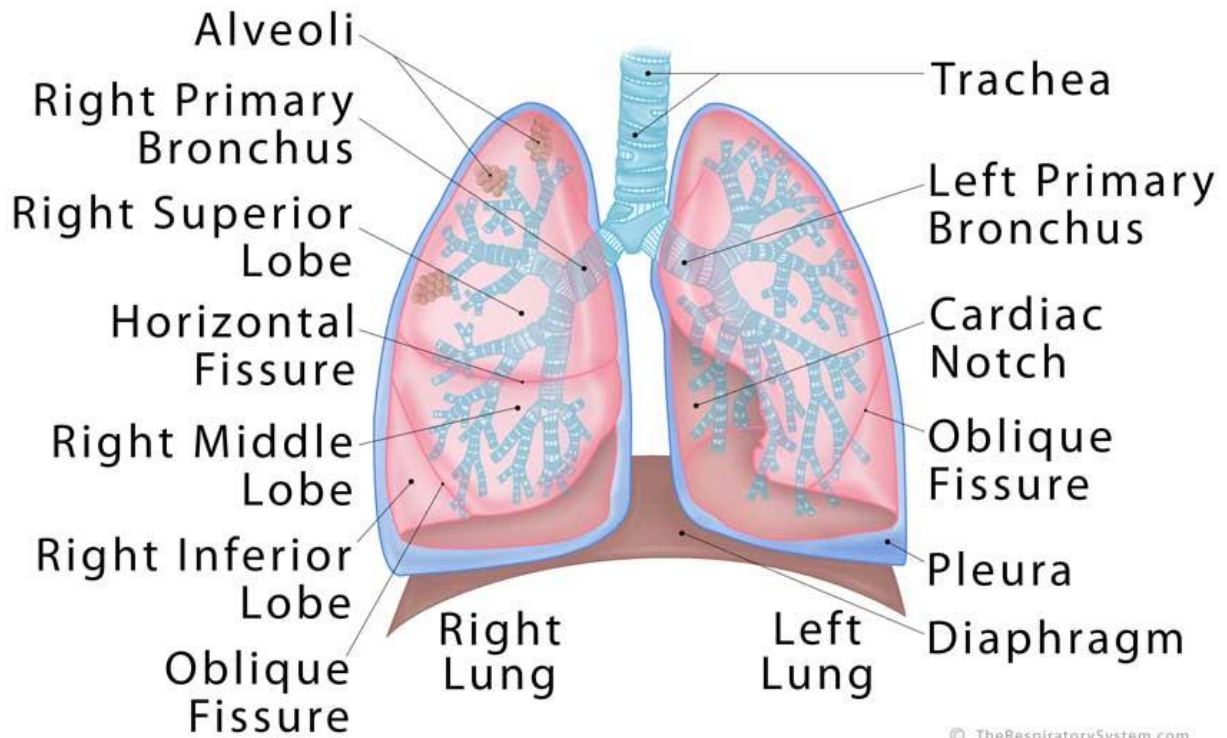
Fun Fact Friday: Your **Lungs** Can Cover a **Tennis Court**



The surface of the lungs that touches the diaphragm is called the medial surface, and the surface that touches the ribs is called the costal surface. The medial surface of the lungs is the surface facing the thoracic cavity, and the heart and large blood vessels are visible on its surface. In the central part of its medial surface is the lung gate. The pulmonary gate includes a bronchus, pulmonary artery, and nerves.



Lungs

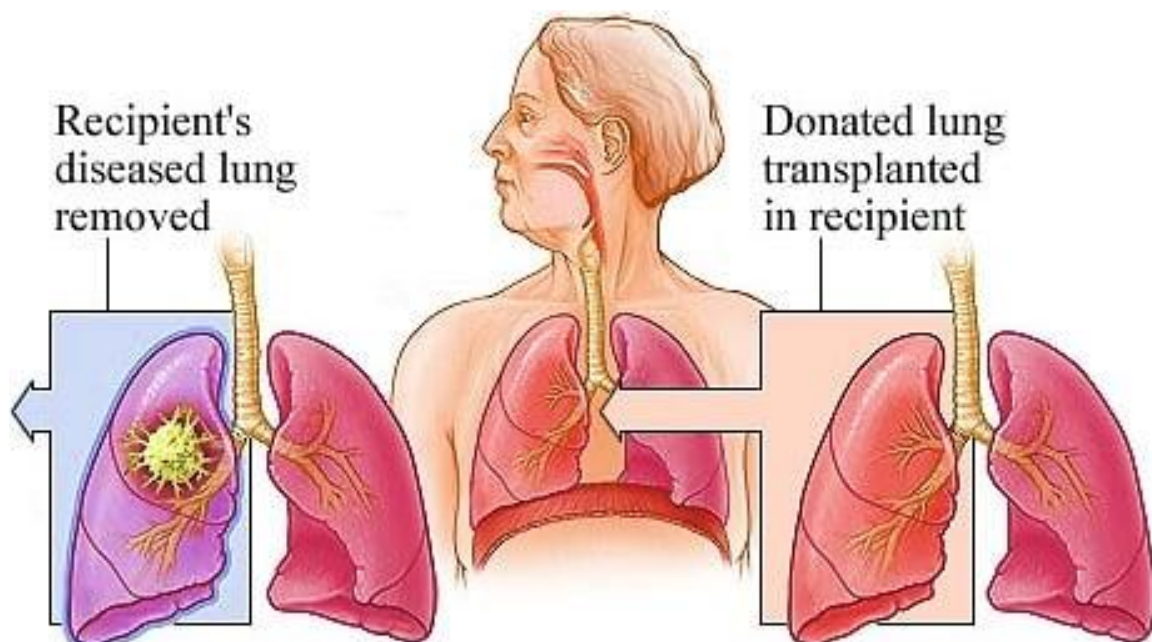


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Main body:

The movement of gases in the lungs. As mentioned in the topic of the structure of the respiratory organs, there are many small bubbles, that is, alveoli, in both lungs of a person, their number is about 750 million on average, and the total level exceeds 100 m'. Such a large level of alveoli ensures rapid exchange of gases in the lungs.

The alveolar wall is very thin (0.004 mm). They were surrounded by small blood vessels in a mesh pattern. During inhalation, atmospheric air enters the alveolar cavity through the respiratory tract. Gases are exchanged by diffusion between the alveoli and the wall of small blood vessels that surround them. The oxygen contained in the air in the alveolar cavity passes into the blood, and the carbon dioxide gas in the blood passes into the alveoli. This is because the pressure of oxygen in the air in the alveoli is high, and the pressure of carbon dioxide in the blood is high. At rest, a person takes in 250-300 ml of oxygen from atmospheric air in one minute.



1- asthma

Asthma is a chronic disease characterized by the condition of the airways located in the lungs. The inner walls of the respiratory tract swell, soften and can be strongly affected by allergens. By reacting, the airways narrow and the lungs become sensitive, which can cause chest tightness, shortness of breath, or wheezing. Currently, immunotherapy is carried out with vaccines that reduce sensitivity to allergies and help reduce the appearance of crises. Several factors must be considered in treatment; management of allergies, mucosal inflammation and bronchospasm. Vaccines and antihistamines work for allergies. Inhaled corticosteroids at the lowest dose are most effective for inflammation of the mucous membrane. Since these do not act immediately against bronchospasm, bronchodilators should be used to relieve the feeling of suffocation. Anticholinergics such as Ipratropium Bromide are used when asthma is associated with pulmonary fibrosis or chronic bronchitis.

2- pneumonia

Pneumonia is an infection of one or both lungs that can be caused by viruses, bacteria or fungi. Streptococcal pneumonia is the most common bacteria. The symptoms of this disease can vary among different affected individuals, but some of the most common are: cough, expectoration of phlegm, episodes of fever, chills, shortness of breath, sweating, confusion, headache, loss of appetite, etc.

Treatment

Bacterial pneumonia is treated with antibiotics for about eight days. Antibiotics help treat several types of pneumonia, and some can be prevented by vaccination. If outpatient treatment fails, it requires hospitalization for intravenous fluids and antibiotics and oxygen therapy. If the pneumonia is viral, antibiotics are not given because they do not attack the virus. Pneumonia can lead to sepsis and is fatal in elderly and immunocompromised patients. Currently, there is a vaccine against pneumonia *Streptococcus pneumoniae*, which is the most common bacteria. It is indicated for people over 50 and children, but does not prevent exposure to other factors such as viruses and fungi.

3- Bronchitis

This pathology is caused by inflammation of the bronchi, the passages that carry air from the mouth and nose to the lungs. This is a condition of inflammation of the mucous membrane of the bronchial tubes due to a virus, bacteria or particles that irritate them. People with bronchitis can't breathe well and can't get air into their lungs and clear phlegm and phlegm from their airways. On the other hand, patients with chronic bronchitis usually smoke. The most common symptoms are fever, chest pain, shortness of breath or episodes of wheezing. The most important are those that cause bronchodilation, such as bronchodilators. Inhaled corticosteroids can be added to them to help keep inflammation of the bronchial tubes under control. Some patients develop complications as a result of influenza bronchitis. Subsequently, the use of anti-virus A and B treatments can be determined. In addition, in some cases, the use of antibiotics may be necessary when it is suspected that bacteria are involved. When a severe cough occurs due to bronchitis, it should be treated with cough suppressants and expectorants. Proper hydration is also recommended.

4- Pulmonary emphysema

Pulmonary emphysema causes abnormal and pathological growth in the air spaces in the lungs due to accumulation of air. The clinical course of this medical condition is characterized by significant shortness of breath, fatigue, cough, etc. Treatment of patients with pulmonary emphysema depends on the degree of involvement. Most importantly, stop smoking, use bronchodilators to reduce spasm, and stay hydrated to prevent superinfection from secretions. A person who has the flu or pneumonia can complicate emphysema. In patients with severe emphysema and in the early stages of the disease, lung volume reduction surgery can be performed. The most affected parts of the lung are removed, which allows it to function better. It is also very important to provide respiratory therapy and oxygen therapy, which can help reduce the suffocation that patients experience in performing daily activities and prolong the patient's life. Emphysema patients should eat a healthy diet.

Conclusion:

This article is written in English with the intention of summarizing a large amount of clinical materials, drawing attention to the relevant modern standards, and giving basic recommendations to doctors engaged in medical practice regarding the diagnosis and treatment of respiratory diseases. It contains the medical standards that must be followed for diseases of the respiratory organs, the advice of experts, and the international classification of diseases, although there is little information about pulmonology.

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