IDENTIFY THE RESPIRATION SYSTEM AND THE ORGANTS OF THEM

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ABSTRAK

Respiration is the process of exchanging gases between organisms and their environment. Respiration involves taking in oxygen, circulating it to cells, and releasing carbon dioxide. The process of respiration involves the respiration medium, the respiratory membrane, and the respiratory organs. Respiration function to maintain pH balance and electrical balance in body fluids. Gas diffusion between the respiratory organs and the environment can occur due to differences in gas pressure. The purpose of this research is to know the anatomy of the respiratory system and to know the function of the respiratory system and its constituent organs.

The method used is the experimental method, the experimental method is an experiment to prove a certain question or hypothesis. Experiments can be carried out in a laboratory or outside the laboratory, experimental work means learning to do, because it can be included in the learning method. The objectives of the experimental method: 1) students are able to conclude the facts, information or data obtained; 2) students are able to design, prepare, implement and report research results.

The results showed that the lung capacity volumes of the two groups of different sexes. probandus one (male). with a body weight of 51.1 kg, height 168 cm and chest circumference at inspiration 88 cm and 87 cm at the time of expiration, lung capacity 2.13 ml. Probandus two (female) weighing 43.6 kg, height 145 cm and chest circumference at inspiration of 83 cm and 79 cm on expiration, lung capacity 1.13 ml. The lung capacity of men is greater than that of women, because men are generally more active than women, so the volume of the lung capacity of men is large and requires a large amount of oxygen.

Keywords: respiration system, lung capacity, constituent organs.

INTRODUCTION

Breathing (respiration) is an event of inhaling air from outside that contains oxygen (O2) into the body and exhaling air that contains lots of carbon dioxide (CO2) as a residue from oxidation out of the body. This suction is called inspiration and exhaling is called expiration [17].

Respiration is the process of exchanging gases between organisms and their environment. Respiration involves taking in oxygen, circulating it to cells, and releasing carbon dioxide. The process of respiration involves the respiration medium, the respiratory membrane, and the respiratory organs [10].

Respiration function to maintain pH balance and electrical balance in body fluids. Gas diffusion between the respiratory organs and the environment can occur due to differences in gas pressure [7].

The respiratory system plays an important role in regulating the exchange

of oxygen and carbon dioxide between air and blood. Oxygen is needed by all cells to produce a source of energy, adenosine tripospate (ATP), carbon dioxide produced by cells that are metabolically active and form acid, which must be excreted in the body. To carry out gas exchange, the cardiovascular system and the respiratory system must work together. The cardiovascular system is responsible for perfusion of blood through the lungs. Whereas the respiratory system performs two separate functions of ventilation and respiration [2].

The exchange of O2 and CO2 in respiration, the amount of oxygen taken in through breathing air depends on the needs and this is usually influenced by the type of work, body size, and the amount and type of food eaten. Heavy workers, including athletes, need more oxygen than light workers. Likewise, someone who has a larger body size automatically needs more oxygen. Furthermore, a person who has the habit of eating more meat will need more oxygen than a vegetarian. Under normal circumstances, humans need about 300 cc of oxygen a day (24 hours) or about 0.5 cc per minute. This requirement is directly proportional to the usual inspiratory and expiratory air volume except in certain circumstances when the oxygen concentration of the inspired air is reduced or for other reasons, such as a reduced blood hemoglobin concentration. The oxygen needed diffuses into the blood in the blood capillaries that cover the alveoli. Furthermore, most of the oxygen bound by blood dyes or blood pigments (hemoglobin) to be transported to body tissue cells [9].

The human respiration system can be divided into 2 (two), namely: the upper respiration system and the lower respiration system. The parts of the two human respiratory systems are as follows: 1) the upper respiratory system, which consists of the outer parts of the chest cavity, namely the nose, nasal cavity, pharynx, larynx, and upper trachea; 2) lower respiratory system, which consists of the inside of the chest cavity, namely the lower trachea and lungs including the bronchial vessels and alveoli. The pleural membranes and respiratory muscles that make up the diaphragm and intercostal muscles are also part of the respiratory system [14].

Respiration in humans can be classified into 2, namely: chest breathing and abdominal breathing. In chest breathing, the muscles that play an important role are the ribs. The rib muscles can be divided into two, namely the outer rib muscles which function to lower or return the ribs to their original position. When the muscles between the outer ribs contract, the ribs will be lifted so that the chest volume increases. Increasing the size will cause the pressure in the chest cavity to be less than the pressure outside the chest cavity. Because the small air pressure in the chest cavity causes a stream of air to flow outside the body and into the body, this process is called inspiration. Whereas in the expiration process occurs when the contraction of the inner muscles, the ribs return to their original position and cause the air pressure inside the body to increase. So that the air in the lungs is compressed in the chest cavity and the air flow is pushed out of the body, this process is called expiration, while in abdominal breathing, the muscles that play an active role are the diaphragm muscles and the muscles of the abdominal cavity wall. When the diaphragm contracts, the position of the diaphragm will flatten out. This causes the volume of the chest cavity to increase so that the air pressure is getting smaller. The drop in air pressure causes the lungs to expand, so that air flows into the lungs (inspiration). When the diaphragm reacts and the

abdominal wall muscles contract, the contents of the abdominal cavity will push into the diaphragm so that the diaphragm is concave towards the chest cavity. So that the volume of the chest cavity decreases and the pressure increases [21].

The respiratory mechanism consists of 2 (two) processes, namely: the process of inspiration and expiration. During the inspiratory process (when air enters the lungs), the muscles between the ribs contract and lift so that the volume of the chest cavity increases, while the pressure in the chest cavity becomes less than the pressure of the outside air. So that air flows from outside into the lungs, while during the expiration process (when the air comes out of the lungs), the muscles between the ribs will return to their original position (relaxation), so that the volume of the chest cavity will decrease while the pressure increases. This pressure will force the lung wall so that the lung cavity enlarges. This condition causes the air in the lung cavity to be pushed out [11].

Factors that can affect the respiratory system in humans, namely: 1) the age of maximum lung muscle strength at the age of 20-40 years and can be reduced by 20% after the age of 40 years. During the aging process there is a decrease in the elasticity of the alveoli, thickening of the bronchial glands, a decrease in lung capacity; 2) gender, the ventilation function in men is 20-25% higher than the ventilation function of women, because the anatomical size of the lungs in men is greater than in women. In addition, male activity is higher so that pulmonary recoil and compliance are trained; 3) height, a person who has a tall body has a higher ventilation function than a person who is small and short [8]. In this research regarding the identification of the respiratory system and its constituent organs,

RESEARCH METHODS

The method used in this research is the experimental method, the experimental method is an experiment to prove a particular question or hypothesis. Experiments can be carried out in a laboratory or outside the laboratory, experimental work contains the meaning of learning to do, because it can be included in the learning method [4]. The objectives of the experimental method: 1) students are able to conclude the facts, information or data obtained; 2) students are able to design, prepare, carry out and report research [15].

The tools used at the time of the experiment were: meter, spirometer and scale, using two different sex workers (male) and (female).

Research procedure:

1. First, the two probandus did a small exercise in the form of going down and up the stairs from the ground floor to the third floor three times in a row,
2. Second, after doing a little exercise, the two probandus used a spirometer to find out their lung capacity,
3. Third, the measurement of the height of the two probandus was carried out using a meter,
4. Fourth, weighing the weight of the two probandus using scales,
5. Fifth, measured the chest circumference of both probandus during expiration and inspiration,
6. Finally, note the results obtained from the two groups of different sexes.

RESEARCH RESULT

In this study, which concerns the respiratory system in humans using two different sex groups, because to determine the volume of lung capacity in humans and can distinguish between them. First, the two probandus did a small exercise in the form of going down and up stairs from the ground floor to the third floor for three times in a row, this was because the

breathing rate would be faster to determine the volume of the lung capacity. After doing small exercises, both probandus use a spirometer device which is an examination that assesses the integrated mechanical function of the lung, chest wall and respiratory muscles by measuring the amount of air volume exhaled from the total lung capacity (TLC) to the residual volume [19]. Spirometry is a simple test that can be performed indoors that allows measurement of vital capacity and FEV1 and allows the separation of restrictive airway diseases from obstructive [6]. The instrument used for spirometry is called a spirometer. How to use the spirometer first inserts a mouth piece or blower into the mouth approximately half as long, it must be precise and tight, then the two probandus inhale as much as possible, then release at once by blowing through the blower into the spirometer. This is done three times for best results. The spirometer will record the best results from the tests performed [13]. The final second step for the probandus is to weigh the body weight, measure the height and chest circumference during inspiration and at the time of expiration.

The results of the lung capacity volume of the two groups of different sexes. probandus one (male) weighing 51.1 kg, height 168 cm and chest circumference at inspiration 88 cm and at the time of expiration 87 cm, lung capacity 2.13 ml. Probandus two (female) weighing 43.6 kg, height 145 cm and chest circumference at inspiration of 83 cm and 79 cm on expiration, lung capacity 1.13 ml.

It can be seen in Table 1. The observation results show that the size of the chest circumference of one male male is greater than that of a female male. The lung capacity of men is greater than that of women, because the respiratory movement is regulated by the control center in the brain, while the activity of the respiratory nerves is stimulated by a stimulus from carbon dioxide (CO2). In general, humans are able to breathe 15-18 times per minute. Fast or slow breathing is influenced by several factors, namely: men generally breathe more slowly than women because the lung volume of men is larger than women. However, the level of O2 needed by men is greater than that of women, it is because in general men move more than women [20]. People who do a lot of general activities are (men) whose breathing frequency will increase because it will require more energy. Compared to people who do little activity generally (women), obviously the respiratory rate will be lower because it requires less energy [21]. After strenuous work such as running or sports, the respiratory rate will be faster. On exhalation a certain amount of CO2 is released [20]. In addition, according to research, women's lung volume and capacity are 20% -25% smaller than men's lung capacity and there will be a greater value for lung capacity in sportsmen and large people [5]. While the lung capacity in men is greater with a value of 4.8 liters compared to women which is 3.1 liters, this difference is caused by differences in maximum muscle strength, body surface area, body composition, oto strength, the amount of hemoglobin (Hb) and pulmonary elasticity [18].

In this study also when the two probands measured the chest circumference, the inspiration for the chest circle was greater than the expiration, it happened because the inspiratory phase was where the diaphragm. ma contracts so that the chest cavity dilates, diagfragma is a muscle tissue in the lung organ (located at the bottom) which has a dome and that is the first step in breathing begins, when you breathe in (inspiration) the diaphragmatic air contracts, flattens out and is pulled

down. As a result, the pressure in the chest cavity decreases and the outside air enters, whereas the expiration phase is where the diaphragm muscle relaxes so that the chest cavity decreases, as a result the pressure in the chest cavity increases and the air in the chest cavity exits by bringing down carbon dioxide (CO2) [23].

Table 1. Respiration system observation results

No.	Probandus	Lung Capacity volume	Heigh	Weight	Chest circles of expression and inspiration	Info
1	Probandus 1 (male)	2.13 ml 28%	168 cm	51.5 kg	Expiration: 87 cm Inspiration: 88 cm	√
2	Probandus 2 (female)	1.13 ml 28%	145 cm	43.6 kg	Expiration: 79 cm Inspiration: 83 cm	√

DISCUSSION

The respiratory system according to previous research explains that Breathing or respiration is the process of taking oxygen bound by other elements and removing the residue in the form of carbon dioxide and water vapor. Oxygen is needed by all body cells in oxidation to produce energy in the form of ATP (adenosine tri phosphate). From the research resultsprobandus who are female have greater lung capacity than that of men. It should be known that in general, the male sex is greater than the female, the lung capacity after activity is much greater than before doing the activity. But in reality there are many imbalances in results. This study found that the vital capacity of the lungs which is owned by the probandus is far below the vital capacity of the lungs in the literature. This is caused by inaccuracy in calculating the vital capacity of the lungs or not understanding in calculating the vital capacity of the lungs. So that there is an error in calculating and accumulating research data. Height and weight also have an effect, obese people will have a greater respiratory capacity than thin people. This is because obese people have more oxygen needs for their metabolic processes than thinner people. Because the oxygen supply is greater, the vital volume of breathing is also large. Likewise, people who have the ideal body weight and height certainly have a large lung capacity as well. The lung capacity of each person is different, because it is influenced by several factors that can increase or decrease the size of the vital lung capacity. The capacity of the lungs at rest and after activity is also different because the more we do the activity, the bigger the lung capacity will be Likewise, people who have the ideal body weight and height certainly have a large lung capacity as well. The lung capacity of each person is different, because it is influenced by several factors that can increase or decrease the size of the vital lung capacity. The capacity of the lungs at rest and after activity is also different because the more we do the activity, the bigger the lung capacity will be Likewise, people who have the ideal body weight and height certainly have a large lung capacity as well. The lung capacity of each person is different, because it is influenced by several factors that can increase or decrease the size of the vital lung capacity. The capacity of the lungs at rest and after activity is also different because the more we do the activity, the bigger the lung capacity will be [12].

The respiratory system according to previous studies explains that the lung is a breathing apparatus that is located in the chest cavity and above the diaphragm. The diaphragm is a barrier to the body cavity that limits the chest cavity and abdominal cavity. In breathing, there are 2 cycles, namely inspiration (inhaling breathing air) and expiration (exhaling breathing air), the results obtained in this study are male sex workers with greater

lung respiratory capacity than female sex. So the amount of breathing capacity of the lungs depends on several factors, including: 1) body weight, the heavier, the more air is inhaled or expelled. Automatically more air is accommodated; 2) age, the more age the stronger it is to accommodate air, but still determined again by body weight; 3) activity, we will breathe more air if we do an activity, for example running, because by running we need a lot of oxygen that we breathe; 4) body health, health factors also play an important role in capacity. For example, if we have had lung disease, of course the air capacity in the lungs is also reduced [1].

Based on the theory and the results of the two studies above, it can be concluded that the capacity of the lungs is the ability of the lungs to accommodate oxygen which in the measurement can be done by means of a person or a probandus to inspire and expire as hard as possible.

The human respiratory system has constituent organs that support the respiratory process.

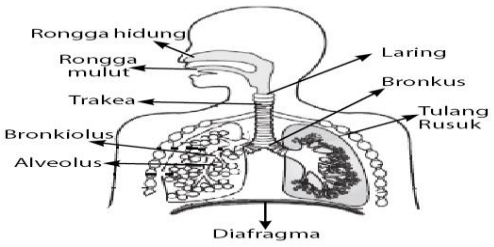

Figure 1. Organs of the respiratory system

Breathing is also one of the characteristics of living things, so all types of living things survive by carrying out this process, including in humans. It has been explained previously that when we breathe, humans breathe in oxygen (O2) and emit carbon dioxide (CO2). Every constituent cell in the human body really needs oxygen. Therefore, humans really need a breathing process in order to get oxygen. The role of oxygen is very important, without breathing oxygen it can impact the constituent cells in the human body, especially brain cells, which will be damaged in just a short time. The incoming oxygen serves to burn food substances such as protein, fat and carbohydrates in the body's cells. The food substances that are burned produce energy and carbon dioxide. It is with this energy that people can do activities and do activities.

The lungs are the most important means of breathing and one of the most important organs for humans. The location of the lungs is in the chest cavity. More precisely on the right and left and in the middle are separated by the heart. The tissue in the lungs has elastic and porous properties like a sponge. The lungs are divided into several hemispheres or lobes. The right lung has three hemispheres or lobes while the left lung is divided into two, each hemisphere or lobe composed of lobules. There is also a double serous membrane or membrane called the pleura which is in charge of lining the lungs. Between the two layers of pleura there is exudate which functions to oil the surface so that it can prevent friction between the lungs and the chest wall which moves when we breathe. Under normal conditions the two layers' touch each other.

However, in abnormal circumstances, air or fluid will give distance to the two pleura, causing the space between them to become unclear. While the diaphragm is a muscle tissue in the lung organs (located at the bottom) which has a dome and it is the first step in which breathing begins, when you breathe in (inspiration) the diaphragmatic air contracts, flattens out and is pulled down. This movement causes increased space in the lungs and causes air to be drawn into the lungs. This movement also triggers the stomach-breathing scheme in humans. These respiratory organs have different structures and functions.

Air or fluid will space the two pleura, causing the space between them to become unclear. While the diaphragm is a muscle tissue in the lung organs (located at the bottom) which has a dome and it is the first step in which breathing begins, when you breathe in (inspiration) the diaphragmatic air contracts, flattens out and is pulled down. This movement causes increased space in the lungs and causes air to be drawn into the lungs. This movement also triggers the stomach-breathing scheme in humans. These respiratory organs have different structures and functions. Air or fluid will space the two pleura, causing the space between them to become unclear. While the diaphragm is a muscle tissue in the lung organs (located at the bottom) which has a dome and it is the first step in which breathing begins, when you breathe in (inspiration) the diaphragmatic air contracts, flattens out and is pulled down. This movement causes increased space in the lungs and causes air to be drawn into the lungs. This movement also triggers the stomach-breathing scheme in humans. These respiratory organs have different structures and functions. While the diaphragm is a muscle tissue in the lung organs (located at the bottom) which has a dome and it is the first step in which breathing begins, when you breathe in (inspiration) the diaphragmatic air contracts, flattens out and is pulled down. This movement causes increased space in the lungs and causes air to be drawn into the lungs. This movement also triggers the stomach-breathing scheme in humans. These respiratory organs have different structures and functions. While the diaphragm is a muscle tissue in the lung organs (located at the bottom) which has a dome and it is the first step in which breathing begins, when you breathe in (inspiration) the diaphragmatic air contracts, flattens out and is pulled down. This movement causes increased space in the lungs and causes air to be drawn into the lungs. This movement also triggers the stomach-breathing scheme in humans. These respiratory organs have different structures and functions.

1. Nose

Figure 2. Nose

The nose is the first breathing apparatus through which air passes. The tip of the nose is supported by cartilage and the bridge of the nose is supported by the nasal bones. The two nasal bones connect the nasal cavity with the atmosphere to take in air. The nasal cavity is composed of epithelial cells layered flat with coarse hair. The coarse hairs function to filter out coarse dust. The nasal cavity is composed of ciliated pseudo-layered epithelial cells which contain goblet cells. Goblet cells are mucus-producing cells that function to filter dust, stick dirt in the nasal hair, and regulate the temperature of the respiratory air as a sense of smell on the roof or nasal cavity, where there are olfactory lobes containing odor cells.

The nose functions as an airway, air regulator, air humidity regulator (humidification), temperature control, air protector and filter, sense of smell, and sound resonator. The function of the nose as a protection and filter is carried out by vibrissa, mucus layer, and lysozyme enzymes. Vibrisa is the hair on the vestibule of the rice which functions as a filter for dust and dirt (large particles). Small dust and dirt (small particles) that can still pass through the vibrissa will stick to the mucus layer and then be expelled by the sneeze reflex. If there is bacteria in the air (very small particles), the lysozome enzymes destroy them [16].

2. Pharynx

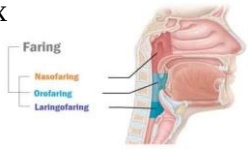

Figure 3. Pharynx

The air after passing through the nasal cavity will enter the pharynx. The pharynx is a connecting channel between the nasal cavity and throat with a length of approximately 12.5 to 13 cm. The pharynx consists of three parts, namely the nasopharynx oropharynx and the laryngopharynx, which is the meeting between the respiratory tract and the digestive tract. Therefore, when you swallow food a valve (epiglottis) closes the respiratory tract (glottis) so that food will enter the digestive tract. The nasopharynx is the part of the pharynx that lies behind the nose above the soft palate. On the posterior wall there are passages of lymphoid tissue called pharyngeal tonsils, which are commonly referred to as adenoids. This tissue sometimes enlarges and covers the pharynx. The auditorium tubule opens from the lateral wall of the nasopharynx and through this tube air is carried to the middle ear. The nasopharynx is lined with a ciliated mucous membrane which is a continuation of the membrane that is covered by the nasal passages. The oropharynx is located behind the mouth under the soft palate, where the lateral walls are connected to each other. Between the folds of this wall, there are the so-called palato-glossary arches which are collections of lymphoid tissue called the palatal tonsils [22].

3. Larynx

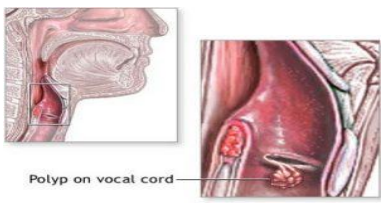

Figure 4. Larynx

After passing through the pharynx, air will go to the larynx. The larynx is often referred to as the voice box because it contains the vocal cords. The larynx is a channel surrounded by nine cartilages, one of the nine cartilages is the thyroid cartilage which is shaped like a shield. In adult males, the thyroid cartilage is larger than in females, forming what is called the Adam's apple. The larynx is often referred to as the larynx or voice box. The larynx is composed of several cartilages that make up the Adam's apple. At the larynx there is a laryngeal valve or what is called the epiglottis.

The larynx consists of two plates or laminae connected in a midline. On the upper edge there is an indentation in the form of V. The cricoid cartilage is located under the thyroid; it is shaped like a mohor ring with a mohor ring on the back (this is the only cartilage that is a complete circle). Another cartilage is both thyroid cartilage, there is an epiglottis, which is a cartilaginous valve and helps close the larynx when a person swallows, the larynx is covered with the same mucous membrane as that in the trachea, except for the vocal cords and the epiglottis which is lined with layered epithelium cells [3].

4. Trachea

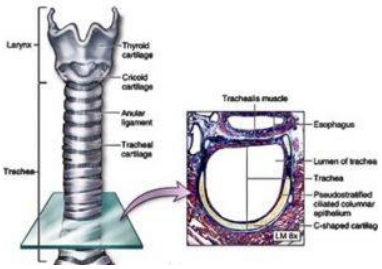

Figure 5. Trachea

Trakea The trachea or windpipe is a part of the respiratory organ that has a shape like a pipe and has a length of about 9 cm. The function of the trachea in general is to help allow air to pass through the larynx and bronchi. The air that enters through the trachea is divided and

diverted to the two lungs by ending up in the two main bronchi. After from the larynx, air will enter the trachea of the trachea as well as the wind pipe or airway which has a length of approximately 11.5 cm with a diameter of 2.4 cm. The trachea is composed of 4 layers, namely the mucosal layer, the submucosal layer, the cartilage layer and the adventitia layer, the mucous layer. consists of ciliated pseudo-layered epithelial cells containing goblet cells that produce ciliary mucus and mucus functions to filter dust or dirt that enters the submucosal layer consisting of connective tissue cartilage layer consisting of approximately 18 cartilages formed letter C adventitia layer consisting of tissue tie. The air that enters the trachea first before entering the bronchi.

5. Bronchi

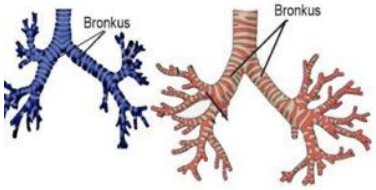

Figure 6. Bronchi

Bronchus is one of the respiratory organs in humans in the form of a pair of branches of the windpipe, one of which leads to the right lung and the other branch to the left lung. This part of the branch is called the bifurcase. The structures that form the bronchi are similar to those of the trachea and are lined by the same types of cells as well.

The left bronchus is longer and narrower, besides that, its position is more flat than the right bronchus. This turned out to be one of the factors why the right lung tends to be more susceptible to disease than the left lung. At the end Bronchi branch again into Bronchioles.

Bronchi have several functions, namely as the main channel to the alveoli. Captures dust that is carried in when inhaling air. The inner walls of the bronchi are coated with a mucus that can make foreign particles stick when they pass, and then with the help of cilia or fine hairs the particles will be removed from the lungs. In addition, the bronchi also have an important role as a conductor of air between the atmosphere and the alveoli.

6. Bronchioles

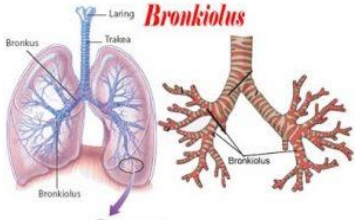

Figure 7. Bronchioles

Bronchioles are branches of bronchi; the walls of the bronchioles are thinner besides that the channels are also smaller when compared to bronchi. In bronchioles the smaller the channels, the less cartilage is and ultimately only the fibrous walls with cilia layers. At each end the Bronchioles are further divided into a bundle of small grape-like sacs called the alveoli. Bronchioles have a function as a conduit for air from the bronchi to the alveoli, and also as a control of the amount of air distributed through the lungs by dilatation and constriction. The respiratory tract from the trachea to the terminal bronchi does not undergo gas exchange and is an area called the Anatomical Dead Space. The amount of air in the area is 150 ml. The beginning of the gas exchange process occurs in the respiratory bronchiolus [16].

7. Alveolus

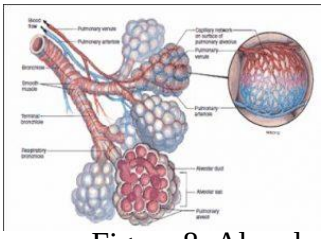

Figure 8. Alveolus

The alveolus is the final channel of the human respiratory tract in the form of

bubbles. The walls are thin, moist and slimy, tightly bound by blood capillaries. Inspiration occurs when the diaphragm contracts the diaphragm is a muscular structure that separates the chest cavity and abdominal cavity when it contracts, the surface of the diaphragm becomes flat at the same time that the muscles between the ribs contract so that the ribs will be lifted this results in the volume of the chest cavity dilating the chest cavity causing a decrease in air pressure in the lungs so that the air will enter the lungs at the time of the exspiration of the diaphragm muscles will relax back to their original shape at the same time the muscles between the ribs will relax relaxation of these two types of muscles causing the appearance of the volume of the chest cavity as a result of which the air will move out.

The main purpose of the breathing process is to get oxygen into the lungs, the alveoli continuously, the volume of air that enters and leaves the lungs can be different when resting, the volume of air entering and leaving the lungs is only a little, however, when exercising, the volume of air that enters and leaves the lungs increases according to the volume requirements of the air in the lungs. It can be divided into several types.

1. Tidal volume (500mL): the volume of air inhaled and exhaled at rest,
2. Supplement volume (1500mL): volume of air that can still be expelled after normal expiration (tidal), ±
3. 3000mL complementary volume): the volume of air that can be inhaled after ordinary inspiration (tidal), (±
4. Residual volume 1200 mL): the volume of air remaining after the maximum expiration of the residual volume cannot be removed by ordinary expiration, the residual volume is also called reserve air, (±)
5. Vital capacity (5000mL): the sum of the total volume of the tidal volume of the supplement volume and the complement volume in other words, The vital capacity is the maximum volume of air that can be exhaled after maximum inspiration, ±
6. Total lung capacity sums the residual volume plus the vital capacity of the lung [21].

So These Are the Respiratory Organs that make up the human breath. Breathing begins with oxygen entering the nose and ending in the lungs. The lungs transfer all the oxygen that enters the blood.

CONCLUSION

Respiration is the process of exchanging gases between organisms and their environment. Respiration involves taking in oxygen, circulating it to cells, and releasing carbon dioxide. Respiration function to maintain pH balance and electrical balance in body fluids. Gas diffusion between the respiratory organs and the environment can occur due to differences in gas pressure. The organs of the respiratory system are the nose, pharynx, larynx, trachea, bronchi, bronchioles, and alveoli.

Probandus one (female) weighing 43.6 kg, height 145 cm and chest circumference at inspiration 83 cm and 79 cm on expiration, lung capacity 1.13 ml. probandus dua (male). with a body weight of 51.1 kg height 168 cm and a chest circumference at inspiration 88 cm and at the time of expiration 87 cm a lung capacity of 2.13 ml. the lung capacity of men is greater than women, because men-Men are generally more active than women so that the volume capacity of the lungs of men is large and requires a large amount of oxygen.

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