THE EFFECT OF IMPROVING QUALITY OF SPORTS PHYSIOLOGY

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Abstract

Sport is a human activity that is reasonable in accordance with the divine nature aims to provide welfare for those who do. Welfare highest is health. Healthy physical and spiritual. Therefore this article aims to explain the role of sport and its effect on improving the quality of physiology, which relates to the quality of physical health. This paper uses the method of literature, related to sports and physiology. Based on the results of the various opinions, it can be concluded, that sports activities are carried out regularly and continuously, through stages that are tailored to the abilities of individuals, will directly improve the quality of physiology, especially the performance of the heart, lungs, associated with the use oxygen in the lungs, including body fluids, such as red blood circulation, the function of white blood, and platelets.

Keywords: *Sport and quality of physiology*.

1. Introduction

Sport comes from the word "manner" means processing, repairing, "body" means the body, physically (Ateng: 2003). So the word is not foreign to the sport as an activity that takes human life, even every one speaks, that exercise is important as a preventive action against various diseases. Because in general the exercise aims to improve the health and physical fitness (Brian: 2003). Where the fresh must be healthy. Even under the banner of sport, the which has been included in the Guidelines since 1983, with the motto "Promoting sports and Exercise your society". But it was still only a slogan, not yet Tirrenus Widely Among the public. Facts on the ground in Indonesia society freshness national research community freshness Indonesia in 2006 only 7% (Arifin: 2006). Means that there are still many people who do not understand and execute the importance of sport as an alternative to familiarize healthy lifestyle through positive activities such as sports.

Sport is a very important component as a preventive action against all kinds of diseases, both diseases caused by microorganisms and degenerative diseases. Especially for the people who live in urban areas, where the people who live in urban deprived of motion, due to the physical performance of almost all replaced by machines created by humans paced Automated. Where humans are pampered by a variety of equipment that was created to replace the performance (motion) in all sectors of human life, even almost all the work completed using the all-powerful engines. This has an impact on the health and physical fitness, motion prolonged crisis. Directly going to hedge on our physiological functions, in turn, will cause various diseases, especially diseases related to physiology.

Such as diabetes, osteoporosis (brittle bones), cardiovascular, high blood pressure, kidney and breathing apparatus. Even lately heart disease did not attack in adults, but children and young people have a lot to heart disease. This adult heart disease ranks the top cause of death. In addition to heart disease also has penetrated in other diseases due to physiological damage. So that our physiology is not functioning properly, including diabetes, respiratory, kidney and others. Actually rationally can all be prevented if we get used to a healthy life through positive activities (sports), diligently moving our bodies through exercise, you can bet we will be working with the physiological optima according to function.

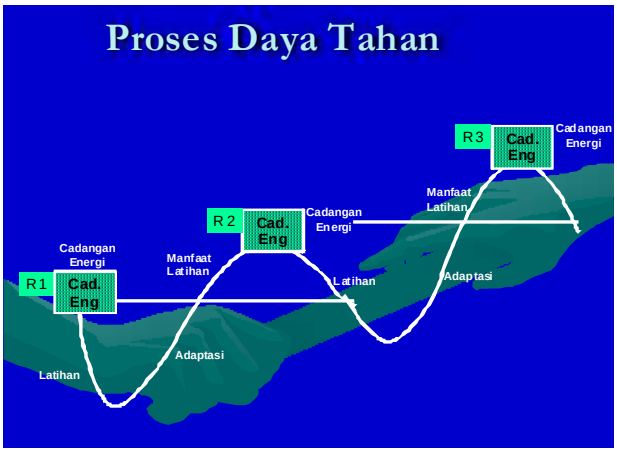
2. Theoritical Background

1. Sports Influence on Metabolism

Metabolism is a process of change of substance in the human body. While the exchange of substances found in all cells of the human body called the exchange of substances in total. Body in the working state will have an exchange of different substances, depending on the severity of a work performed by the person. The exchanges when someone in a state of rest about 1500 K.calories. Called the exchange of basic substances. But if in physical activities such as exercise, like running 12 km / h can be increased by up to 1000%. Calories needed each profession is estimated as follows:

No	Job	Calories are needed within 24 hours
1	Scribe (employees)	2600 K.Calori
2	Doctor, carpenter	3000 K.Calori
3	Soldiers in an exercise	4000 K.Calori
4	Athletes (sportsmen)	5000 – 6000 K.Calori

In principle, the exchange of substances in humans there are two, the first is called anabolism, the exchange of these substances is to build (build). That means building new cells in humans. If this occurs in adolescents aged children, then he will add height. While the second is called the word bolisme (vandalism) otherwise if they occur in adolescent age children, it will be stunted. Including when we do heavy physical activity. As doing exercise with high intensity, then our body will occur destruction of cells for preparation of energy, when the energy of carbohydrates as a primary energy is not sufficient, it can be replaced by energy from protein and LEMAKA, so there will be destruction of cells in protein or fat for energy, in maintaining the continuity of the activities being carried out. After completing the activity at rest (sleep) will return to anabolism (formation) of new cells, the so-called theory of compensation.



Sumber (Bompa:1994)

2. Effect of Sport against Pulmo (Lungs)

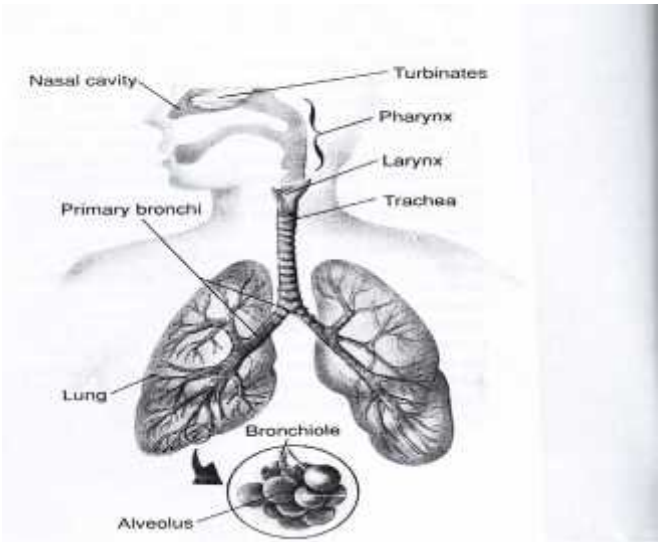
The lungs of a nonsports people will vary with the sport, a sportsman who perform hard physical activity will affect the anatomy of the lungs. So that the lungs of a sportsperson can accommodate 1.5 liter more oxygen than non-sportsmen. Anatomy of a sportsman lung bigger and stronger than non-sportsmen. This is due to the physical gestures that do, will automatically be followed by activities on pulma respiratory (lung). Motion respiration tend to have higher with the motion of inspiration (insert) oxygen into the pulmonary through the nose will be more, especially on respiratory insulair was led by Hb (hemoglobin) for combustion with glucose in the muscles that perform contraction, then the rest of combustion in the form of Co2 released, motion expiration as the rest burning. A sportsman perform respiration is lower than non-sportsmen.

Lung (pulmonary) is located in the chest cavity, the side of the back. Where the chest cavity (thorax) is formed by by the side of costae, thoracalis rear vertebra, sternum on the front, while the bottom is limited by a diaphragm (diaphragm). All of which form the chest cavity (thorax) and helped performance, especially at the time of pulmonary respiratory insulair. Where at the time a person has completed a strenuous activity. As an athlete just finished a 100-meter sprint, the lungs are working very hard to restore debt oxygen (O2). Because the 100 meters sprint power used is an-aerobic power yet use oxygen, then a runner will have a debt of oxygen (O2). The task is to perform pulmonary respiration. Based on the results of research conducted by Archibald V., Hill of England expressed an athlete with an average size at rest the lungs using a ¼ liter of oxygen per minute. However, when doing strenuous activity increased to 15 times of about 3 to 4 liters.

Lungs as respiratory or breathing apparatus with respiration is a bodily system continuously delivering oxygen to breathe (Davis: 1999, 66). In the uptake of oxygen (O2) and remove the combustion residue in the form of carbon dioxide (Co2). Oxygen (O2) is required by the body for energy (Davis: 1999.66), when the disruption of alveoli like the smoke of cigarettes smoked, then the decision-O2

(oxygen) will not be optimal. Thus it will directly increase the expenditure of energy and reduces appetite.

So that people who smoke are not able to optimize the performance of his lungs. Especially in the alveoli (bubble dead end) as a tool for the exchange of gas (respiration) between the oxygen O2 as a result of inspiration with carbon dioxide CO2 to expiration (Co2 disposal) were tied by hemoglobine (Hb), or blood red dye. With the amount of nicotine and tar which stick to the alveoli, it will have a direct impact on the time taken (Inspiratie) oxygen (O2), for combustion with glucose to manufacture energy (power) and exhaust (Expiratie) carbon dioxide (CO2) as a combustion residue not optimal. In addition, nicotine but to close the neural connections can also cause cancer of the lungs.



Gambar Pulmo. Sumber: Jack H., Wilmore & David L., Cotill. 1994. 192

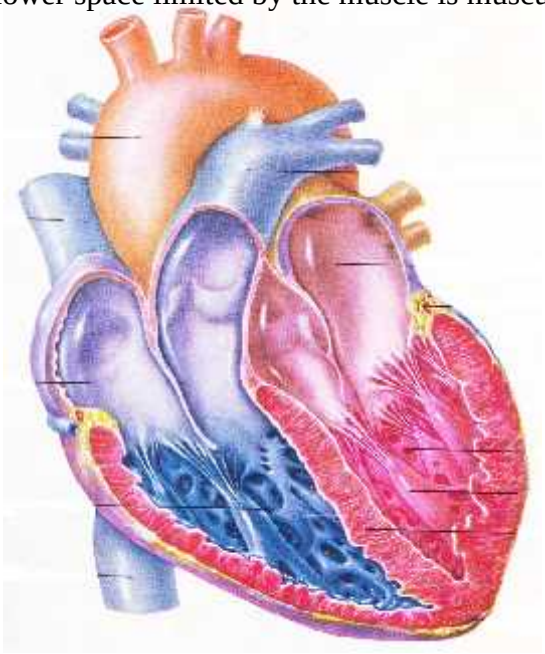
Based on the results of Hammond & Horn stated that people who smoke (*cigaret*) are likely to be suffering from cancer of the lung, cancer of the larynx, bladder, diseases of coronary arteries, liver cirrhosis, pneumonia, ulcers of the stomach and intestines twelve finger. Below is a picture of the lungs.

Lung air shelter, in this case oxygen (O2). The amount of oxygen present in the lungs of about 5500 cc O2, consisting of regular air 500 cc, 2000 cc of air reserves, air complementary amount of 4000 cc 1500 cc, which is called tidal volume. While the total volume of air plus the residue of 1500 cc of air that is attached to a 5500cc called alveoli so the overall total volume. Air used for

physical activity of 4,000 cc, is called tidal volume. People who have a higher Vo2 Max, then certainly have excellent physical freshness and certainly has good health. Whereas a person who has Vo2 Max is low, then the physical freshness is also low (Kuntaraf & Kathleen: 1992.35). To determine the fitness level of a person can be done through a physical fitness test. Including through bleef test, cooper test or test Balke, Harvad test, mentoye test, and others.

3. Effect of Sport Against Heart

The heart is a vital tool as pumping blood throughout the body. Big heart are normal in the not sportsmen at left fist. The heart has four chambers room at the top there are two rooms, the atrium and the atrium dextra sinistra. In the bottom two chambers are ventrikel sinistra and ventrikel dextra, between the upper and lower space limited by the muscle is musculus annulus fibrosus.



Gambar. Pulmo (paru-paru).
Sumber. Anderson: 1975. 153)

The whole red blood pumped by the heart throughout the body to perform its functions, ie the body's supply purposes. Blood in the adult human is about 5 liters and must circulate throughout the body in one minute is called the heart minute volume. The formula to calculate blood 1/13 X weight. The number of blood cells for fresh, for the red blood cell (RBC) of approximately 6 million cells per mm^3, for white blood cell (WBC) of approximately 8000 cells per mm^3 and platelets about 300,000 cells per mm^3.

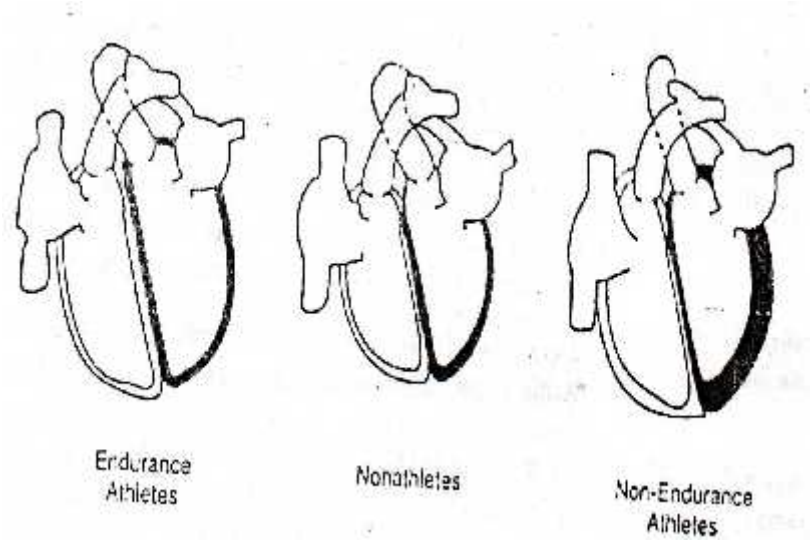
An athlete or someone who exercise regularly and continuously through a targeted program that will certainly have an optimal physical fitness. For ages 40 years and older should exercise regularly, should not be less than 4 times in one

week. Each time with about 45 minutes to 90 minutes, with intensive movement, if it is done regularly and continuously, it will certainly have an optimal fitness, as well will have good health. Because by doing regular exercise and programmed, according to the physical needs, it will directly improve the function of physiology, especially on the heart as a vital component in life. Heart as a means of pumping blood throughout the body, where the blood as the body cells carrying purposes. At the time of physical activity, such as exercising an increase in heart rate and stroke volume (Flora: 2015. 9). The increase in the stroke volume of heart-related laws starling heart with each heart muscle ajar will cause contraction of the heart is getting stronger, will cause more blood back to the heart, called venous return, where the blood of his duty to bring the purposes of the body and forth carrying substances that are not required by body in the form of carbon dioxide (CO_2) to enter the atrium dextra.

Based on research data that heart disease is the number one killer disease in the world, while in Indonesia is the number three killer diseases (Kuntaraf & Kathleen: 1992.41). The most prominent causes of heart disease is due to the lack of movement (exercise), stress and diet is not well controlled. The person doing the exercise correctly will be able to do the burning of more than 2,000 calories, then he will be protected from heart disease. This is evidenced from the results of research conducted by Moris on out in 1970, that those who exercise regularly have an increased risk of coronary heart disease does not reach half of that of those who do not exercise. (Kuntaraf & Kathleen: 1992.45).

If we perform in an optimal physical activity (exercise), the heart and the pulmonary (lung) we also will conduct its activities optimally anyway. Because of the heart and pulmonary would always be associated with or adjust to the physical performance (skeletal muscle). A sportsman who exercise regularly and optimally, it can certainly have a different heart to people who are not sportsmen (non-athlete). In the sporting activities of an athlete who is more dominant in moving anaerobic, have a different heart with a dominant athlete doing aerobic movement. As the heart of a sportsman distance running marathon suppose bigger heart, but the ventricular wall is not too thick. While the heart of a sprinter (an-

aerobic) heart is not too big but its thicker ventricular wall. whereas the non athlete (ordinary people) heart is only as big as a fist of his left hand. That is smaller than the second heart sportsmen, both aerobic and an-aerobic. Where there is a difference between the heart of a sportsman (athlete) aerobic long distance (distance running) the image to the left. while on the right an-aerobic athlete as in sprint (sprint, and the image in the middle is a picture of the heart of man is not an athlete.



Based on the comparison of the image above shows clearly that, the heart of the person who is not an athlete look smaller and ventricular wall is also thinner, not as thick as ventricular heart sportsmen. Where the left ventricle is indispensable for the performance of the heart in pumping blood through the aorta to circulate throughout the body, in order to meet the needs of the body in performing daily tasks. To carry out its duties in the form of supply of nutrients such as glucose and oxygen as materials for energy or energy in doing muscle contraction. While on ventriculus dextra rooms where there is on the lower right, serves to pump blood to the pulmonary (lung) for excretion (throw) from the combustion of carbon dioxide (CO_2) through the nose.

Someone who has ventricul thicker and large, it is certain that more amount of blood that is pumped throughout the body to supply the body's needs. Because the task of red blood (erythrocyte) serves as a transport carrying everything needed by the body, either oxygen as material oxidatie with glucose, and carries carbon dioxide (CO_2) as the rest of the combustion are discharged through pulmonary (lung) including other substances that are required by body.

Performing heart systole in one minute for the ordinary non sportsmen about 70 times, called the minute volume of the heart. While the cardiac stroke volume means that blood can be pumped or removed by the heart through the aorta in one systole about 70 cc, or often called the stroke volume of the heart. Whole blood must have been circulating throughout the body within one minute. A minute and a stroke volume of the heart, then the amount of blood that circulates throughout the body in one minute can be calculated by multiplying 70 x 70 cc = 4900 cc. So overall human blood was around 5 (five) liters.

As for a sportsman does not have 70 times systole in one minute. But it would be even lower may be only 40 to 60 times only for every minute. Because of a sportsman (athlete) has a thicker wall ventricul and very strong. In addition, the heart of a sportsman or athlete is greater. So that an athlete or sportsman is certain to have optimal physical fitness. It can be concluded that exercise is the most appropriate means to improve cardiac performance optimally, by having optimal physical fitness will automatically heart healthy and strong. A performance that is not supported by good physical health, it is certain that the results achieved will not be optimal. To that physical fitness is one of human needs.

Someone who has a physical fitness with good, then certainly have more opportunities to get what he wants, which is the physical fitness in this book is someone who is able to perform activities or certain jobs in their daily lives without experiencing fatigue meaningful. The method of training related to improving the components of physical fitness including: (1) exercise circuit (Circuit Training) can be used to increase strength, explosive power (power) muscle endurance local, aerobic capacity, the ability of an-aerobic, agility, skills

in accordance with a branch sport. (2) the exercise load (Weight training) can be done to help increase strength, explosive power (power) and local muscular endurance. (3) Calisthenics can increase strength, muscle endurance local, agility, speed, and flexibility, (4) Interval Training (sprint) helps improve power, the ability of an-aerobic, agility and speed, (5) Continuous training aims to improve aerobics and local muscular endurance (Davis Kimmet Auty: 1998 165).

4. Influence of Sports on Blood Pressure

For people who trained with moderate portion activity, blood pressure systole at the break lower than in ordinary people. If the person doing heavy exercise, the blood pressure at the time of the break was higher than the average person, even an athlete's blood pressure could reach 220. But after he reduced the severity of exercise, the resting blood pressure back lower than in ordinary people. Pulse pressure is the difference between the pressure systole and diastole. Pulse pressure is influenced by exercise. While pulse pressure trained person during his practice will be greater than usual. Because the heart is greater stroke volume. While the frequency of heart less. A sportsman or athlete in the blood are not the same as people who are not athletes, usually of regular physical exercise will be changes include:

a. Erythrocyt (grains of red blood) in people who trained the number is increasing every mm^3 to 6 or 7 million eggs. While the usual 4.5 to 6 million eggs per mm^3 her.
b. Her hemoglobine levels also rose. It will benefit our body tissues in serving the needs of O_2 as a material oxidation with glucose in the muscles that are contracting.

There is also a rise in the levels of erythrocyte because the long silence in the mountains. This is due to air in the mountains a lot less containing O_2. so that the body we multiply the number of erythrocyte. Bone marrow red marrow (medulla rubra) is a place for producing erythrocyte, the people who are trained to be very active. The advantage is in the time of strenuous exercise, damaged erythrocyte

soon be replaced by the medulla rubra. Erythrocyte prime number around 6,000,000, - its cells per mm^3. While the people who are not trained replacement passive, so that he will temporarily become anemic as a result of the exercises weight will also increase the number of leukocyte (cells, white blood cells) increased from the normal amount of 7000 per mm^3 will be 20,000 eggs per mm^3, since the center manufacturing becomes more active. The more severe the sport bigger gains.

Table. The Increase Leukocyte on Sport

No	Type Sports	The increase in the number of leukocyte each mm^3
1	basketball	8100
2	Wrestling	7800
3	Runners 400 m	7700
4	Runners 1500 m	76003

Sumber: (Kuntaraf & Kathleen: 1992).

The principles of measuring blood pressure is put on the principle of RIVA Rocci, which is already commonly used by health workers. In pathological circumstances (illness / disability) Blood pressure also changes from a healthy state. As the people who are doing sport, then the blood pressure will rise temporarily, about 30 to 40 mm Hg from a normal state, and a sleeping person, the blood pressure will decrease slightly. Blood pressure beyond normal limits can cause a disease called hypertension (high blood pressure), through sports activities regularly and continuously, it will be protected from the disease. It is based on research results George in 1964, the tribe "tangled" from Kenya all members of the tribal community was not found diseases related to high blood pressure. Because the tribe masai have a lot of physical activity throughout life. Even the physical condition of the male Masai tribe in proportion to the physical condition of athletes the Olympic Games (Kuntaraf & Kathleen: 1992. 63). To monitor your blood pressure situation, we should always check systole and diastole our blood pressure. The normalcy of blood pressure listed in the table below according to age as follows:

Table. Estimated Blood Pressure Normal accordance Age

Age	TD Systole (mmHg)	TD Dyastole (mmHg)	T. Nadi (mmHg)
10 years	103	70	33
20 years	120	80	40
30 years	123	82	41
40 years	126	84	42
50 years	130	86	44
60 years	135	89	46

Blood flow velocity in each place is different, is influenced by a wide number of vessels hole traversed by the blood. In the vast number of burrows aorta entirely at least. Therefore, blood flow in the aorta is very swift. While in arterioles (arteries were small) number of wide hole hundreds of times greater, because the branches capillaire innumerable, because the flow of blood in capillaire very slowly, and in venula (veins hair) blood flow increases fast, because the vast number of burrows in venula began to decrease, until the vena cava, of the superior vena cava and inferior vena cana blood flow has been rapid. While the speed of blood flow in the aorta each second ranged between 200-600 mmHg per second, diarteriolen blood flow of 2.8 mm per second and in the area capillair 0.5 mm / sec.

Blood flow very slowly in capillaire very beneficial, because it gives the opportunity for an exchange of blood to the water network. To illustrate how the speed of blood flow, the experiment as follows: Substances which taste bitter (decholin) injected in the veins around the upper arm (near the elbow). This bitter substance will follow the blood through the heart, lungs until the tongue so that people feel bitter. It turns out it takes just about 20 seconds, the substance flow with blood from a vein in the arm to the tongue. So we feel a bitter taste on the tongue.

At the time of physical labor, muscle tissue should receive more arterial blood, cardiac minute volume must be increased. His breathing is deeper and faster, suctioning of blood to the heart also increased (remember the increasingly negative intrathoracic pressure). Then the muscles that work dynamic tapered (contracts) or loosen (relaxatie) continuous, veins in their stressed muscles because of the valves in the veins. Blood venues as if pumped to the heart (muscle

pump mechanism). Moreover, if the work is big muscles, for example the movement of walking and running. Presso-Receptor.

In general, red blood can be divided into two parts: (1) The solid part called blood cells (corpus Coli), (2) the liquid part called blood plasma. Human blood has a pH of about 7.4 and can change the range of 7.3 s.d 7.4. This change is caused by hemoglobine, blood red dye. People who lack hemoglobine, will lead to a disease called anemia. Due to the lack of minerals, especially iron. Iron is obtained from green leafy vegetables. Such as cassava leaves, katuk, leaves and other nuts. Erythrocyte red blood cells have cells that are shaped like a disc with a size of 7.5 x 2 micrometer. In a normal red blood mm3 approximately 5,000,000 (five million) cells, and this can be increased through exercise and a balanced feeding of up to 6,000,000 cells per mm3. The red blood cells in adults is made on the bones that have the red marrow. In the red blood cells are dye called Hemoglobine (Hb). This substance is a compound with a substance with iron globine eggs called Hb color red.

Hemoglobine is a substance that is extremely sensitive to O_2. Hb in pulmonary deals with O_2 and reduced back to Hb, while O2 is used on oxidatie with glucose to produce energy (power) in the muscle tissue, to excite or muscle contraction. People who lack hemoglobin or blood red dye, will lead to a disease called anemia. While thrombocyt (blood clotting) the shape of thin pieces 1 mm3 for the normal (healthy), there are about 300,000 cells. The pieces in the blood contained a substance called protrobine. This substance is essential for blood clotting, when exposed to injuries, while those who do not have thrombocyt, the disease is called hemophilia.

5. Effect of Sport against Kidney

Kidneys are vital organs in the body there are two, located between the waist, as a means of disposal of liquid exresi in urine. Urine is made through glomerulus water with filtered blood, where unused water will be discharged in the form of urine. So the blood becomes clean. Damage to glomerulus will cause kidney failure resulting in death.

1. Kidney Function
    - Filtering metabolic waste substances from the blood
    - Maintaining fluid balance
    - Maintain osmotic pressure by regulating the balance of salts in the body
    - Maintaining the balance of acid and alkaline levels of body fluid by removing the excess acid / base via urine
    - Removing the remnants of metabolism such as urea, creatinine, and ammonia
    - Produce the hormone erythropoetin that played a role in assisting the manufacture of red blood cells
    - Enabling vitamin D to maintain blood calcium levels and bone health

Kidney is one organ of the human body are included in the excretory system, other organs of the excretory system is the heart, lungs and skin. The kidneys are located on the posterior abdominal wall, especially in the lumbar region, on the right and left of the spine, wrapped in a thick layer of fat, behind the peritoneum, and therefore beyond the peritoneal cavity.

Position kidneys can be estimated from the back, ranging from the height of the thoracic vertebrae to the third lumbar vertebra. Right kidney is slightly lower than the left, because the heart occupies a lot of space on the right. Shaped like kidney beans, totaling a pair and located in the lumbar region. The size is approximately 11x 6x 3 cm. It weighs between 120-170 grams. The kidneys filter waste material from the blood and removing it with urine.

In physiological functioning kidneys maintain acid-base balance in the blood (electrolyte balance) by throwing metabolites and ingredients that are not useful anymore of blood. At first screening of blood carried on the glomerulus, and then repeated at 1 kontraktus tubules (proximal tubules) that there is a balance of salts in the blood. The final result of such filtering is urine that is finally out of the ureter.

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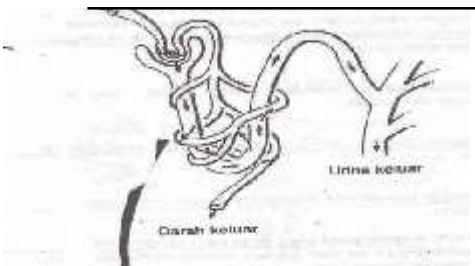
Kidneys play an important role in the regulation of blood mix, and obviously kidneys dispose of substances are destroyed by the liver. The role of the kidneys in the body to regulate blood mix, not just trash metabolarine result set either in the form of organic substances such as urea, urine acid, kreatine, also includes setting the concentration of salt, moisture content, and the degree of acid (zuurgraad) of blood. So the job of the kidneys is very extensive and important. So if there is severe disruption of the kidney, such as kidney failure, human beings may not be able to survive, if they do not do a kidney transplant. Continuously throughout the blood circulating throughout the body, the blood must pass through the kidneys as much as 25% of it.

The blood vessels that go to the kidney spread into branches to be capilair-capilair shaped spools of thread called glomerulus (thread-benag filter). Each glomerulus has a sheath called sheath Bowman (Bowman Hoop), which is the beginning of the bile duct. Glomeruli with Bowman sheath called objects of Malpighi. Blood vessels that come out of the glomerulus branches and eventually became capilar capilar-encircling channels of kidney (renal tract that is a continuation of sheathing Bowman). The speed of blood flow through the kidneys approximately 1200mml / ment. So the capillary network of high pressure by an average of 60 mmHg. Thus causing a rapid fluid filtration into capsules bowman.

Conversely low-pressure capillary network in the capillary system pritubulus work at an average pressure of 13 mmHg which allows asorssi caitran fast because of the high pressure plasma somotik. So kidney function is a tool for filtering or washing the blood, so the blood becomes clean not mixed with other substances that harm the body. The image below inside the kidney. A person who suffered damage to his kidneys, so he can not do the washing of blood in his body, and failing to do kidney transplants, with the long term would have fatal consequences and will lead to death.



Darah masuk

Darah keluar

As for the things that can damage the kidneys is when we are short of drinking, eating foods high in containing certain substances similar ammonia, such as eating jengkol, pete, if consumed too much, eating foods that contain dyes, which do not have permission from the Ministry of Health.

Below is the process or how the pro urine in humans as follows:

1. The blood pressure in the glomerulus is still very high, because the distance from the aorta to the glomerulus is very short (close).
2. Wall capilair glomerular filter is very soft (ultra filter) which can be penetrated by water and substances that are very small molecule, but the protein molecules can not penetrate.
3. Very high blood pressure in the glomerulus can win colloid-osmotic pressure stress proteins found in blood plasma, and consequently came water molecule substances other very little through the walls of the glomerulus to Bowman sheath, then there was a pro-urine (in pro-urine still contained glucose).

If the water content in the blood, colloid-osmotic pressure of the blood is reduced, so that the pressure in the glomerulus is free to push the water in the blood to the majors sheath Bowman, consequently lot of urine production. If the water content in the blood is very low (because a lot of sweat) urine bit and a bit lumpy. Especially litter nitrogen and acids are removed from the body by the kidneys with urine. For the urine through the process as follows: the pro-urine still contained glucose, but glucose in the urine is already lost, because sucked

back by the wall of the renal tract capilair continue into the blood vessel. This indeed is a must, since glucose is the energy source.

Suctioning back of this glucose is the active work of the bile duct. Furthermore, there is also actively suctioning back some of the water from the pros - the urine (water is indispensable also by blood). Now there lived urine containing substances whose levels are higher than in the pros- urine earlier. The substances present in urine, namely:

1) had higher levels of certain substances in the blood (Na, K, Ca, Mg, Cl).
2) substances that are actually really should not be in our blood ammonia, dye shoes, paper, cloth, etc.).

Thus, the substances discharged with urine only the rest of the group no.1 above substance after being sucked as needed. While no group substances. 2 must be disposed of with urine. The number and mix of urine each time can be changed. The amount depends on the usage of water and sewer, when many excreted through the skin (sweat), then a little urine. Meanwhile, mix the urine depending on the nature of a person's diet. When people eat a lot of protein (meat) there exists a mixture of urine that many amino acids in desainur pass that after ammonia. So people who eat the meat, the urea in the urine is so high that burdensome task kidney.

Instead people can save kidneys with little to eat the meat. The yellow color of urine coming from some of them dye dye bile into the blood and excreted through the kidneys. So two very important things that need our attention from the work of the kidneys are: (1) Filtration (filtration that occurs in the glomerulus). (2) suction back that occurs in the bile duct. There are hormones that intervene against kidney tasks that hormone hypophyse (from embelan gland of the brain). When this hormone is not present, the amount of urine for 24 hours about 20 liters and very much water. Hormones hypophyse was very instrumental in arranging the household water. After the urine until the end of the bile duct, then all the water collected in advance in the cavity of the kidney, then the water is sent to the bladder (vesica urinary) through the urinary tract (ureter). The bladder walls are

composed of smooth muscle tissue which can adapt itself to the amount of the contents contained therein.

6. Sports for Ages Baya and More

Lately a lot of people in sports activities is not oriented on the circumstances and the physical ability he has. Did not feel that the growing age, will decrease his ability, especially his physical ability, keep in mind, that people aged over 30 years will decrease physical abilities one percent annually. So that the exercise is not in accordance with their capabilities will lead to things that are not desirable, it will even lead to death. As often happens a lot of people doing sports activities, which should improve their health and physical fitness. But after exercise, which gained even cause havoc (death). One may even consider exercise cause a negative thing for us, because many disastrous (death). This is due not aware that his physical abilities are not in accordance with the exercise done.

As of late this is a trend, shall exercise foot. While he was already entering the age above 40 years of age which are already decreasing the physical abilities and no longer able to perform an-aerobic movement with a relatively long time. While futsal. Closely related to the performance of an-aerobic, then .no matched for age. Because an-aerobic movement of energy used is an-aerobic energy without using oxygen (O2), such as foot shall, highly unsuitable for the age. Sports are recommended for the elderly is a sport associated with aerobic movements, such as walking, jogging, biking, doing exercise, gymnastics flexibility, and swimming.

Sport is very important to maintain body fitness. But we must realize that the power to the middle and advanced age, is not as good at a young age. Peak physical abilities a person up to age 30, the sportsman is often called the golden age (golden age), above that age will decrease their physical capabilities, including its ability to function. Such as cardiac, pulmonary it began to complain at the time of heavy activity, such as climbing the stairs.

To resolve all such complaints very necessary to do sports, through a program tailored to his abilities, targeted and sustainable. Recommended exercising 4

times per week with a duration of 45 to one hour, If you want the order to the muscles, heart and lungs heal, to be able to perform tasks in support of the daily performance, if it is done with full sincerity and continuous, will improve health and physical fitness (Harsuki: 2003). As well as to reduce the cost of healthcare to zero%, where health care costs are now more expensive.

Doing exercise is preventive and not curative for all diseases, especially generative diseases, even including diseases related to microorganisms. Because the exercise will improve the ability of our physiology, especially in body fluids such as RBC, WBC and Thrombocyt, when RBC are both about 6 million cells / mm3, while s.d 8000 WBC approximately 7000 cells / mm3 and thrombocyt 300,000 cells / mm3. If someone has it, it is certain that the person will have good health. To improve all that can be done through sports activities gradually, on a regular and continuous, must also be balanced with a balanced nutritional intake adjusted to the performance is done.

So the sport is not just shy away from a variety of diseases illnesses. But it can be done to lower blood pressure, for those who already suffer from high blood pressure (hypertension). But it must be remembered exercise undertaken must be adapted to the circumstances of their physical condition of each and should always consult with a physician. Most people who die as a result of exercise, because exercise is done not in accordance with their condition.

As in the present sports that were "hot" is the sport of futsal. Futsal sports activities are not appropriate for people aged over 30 years, especially in people who are not trained to be fatal. Because the sport belong in sports that have an-aerobic movement, then the energy needed including an energy-aerobic. Because futsall including sports activities that require energy-an-aerobic. where movements are requiring speed and high durability.

Recommended for those who are age above 30 years old and not properly trained, should do a sport associated with aerobic energy, which is classified as aerobic exercise. Such as physical fitness gymnastics, jogging, roads and other flexibility exercises. Because basically exercise aimed at making man healthy,

fresh and strong. In healthy Islam is seen as second best after of Faith favors. Even God actually like strong believer. Therefore, exercise is necessary.

7. Conclusion

Exercise is the most effective means to cultivate healthy lifestyle through positive activities. Sport as a preventive action against various diseases. So as to reduce health care costs, even to zero percent. Except for diseases caused by mechanical, and chemical chemis. Like hit, exposed to heat, and as a result of poisoning. Exercise can improve the quality of the performance of our physiology, so it can work more optimally included in the circulation. Diseases that arise in a person due to the blood circulation is not smooth or not normal.

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