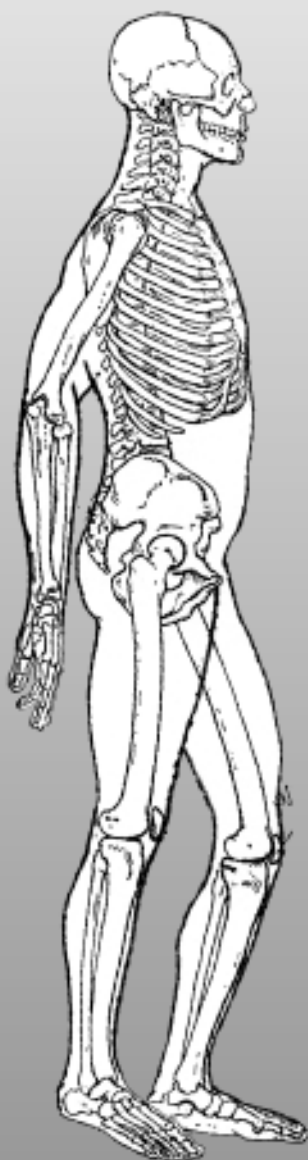


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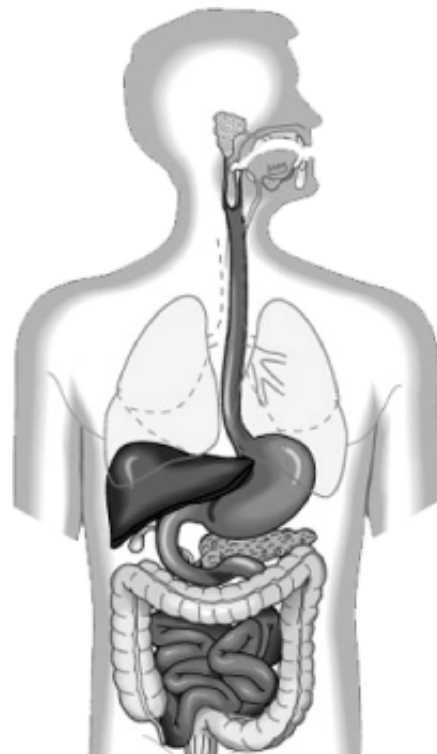
# MAINTAIN THE INTERNAL BALANCE

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Since Baba Ramdev has begun the mission of popularizing Yog and pranayam the people are becoming more and more aware towards these ancient health-building systems. Both media and people are bowing down in front of Yog and pranayam after realizing the importance of Yog and pranayam. The miraculous results of Yog and pranayam have become the topic of discussion amongst the people and media. A question arises in this situation that whether pranayam is indeed a strong weapon to fight out all the diseases. As a student of science and general inquisitiveness this question arose in my mind also.

It is necessary to understand a few things before knowing the scientific basis of pranayam, because they will be helpful in understanding and explaining the facts.

The author of several books and renowned pediatric Dr. O.P.Ghai says that the human body begins with two cells in the mother's womb which increase to 20 thousand crore cells on the 60<sup>th</sup> day. There are 20 crore cells at the time of birth which increase three times when the person becomes adult. Wear and tear and repairing of cells is the ultimate rule of the body. Millions of cells die everyday and an equal number of cells are produced. Blood makes new proteins and the function of repair and production takes place. The dead cells come into the category of left out foreign particles due to this wear and tear. It is necessary to remove these dead cells from the body. This is possible only with the help of proper blood circulation. Otherwise the foreign particles create obstacle in the normal pace of cells



and related organs.

There are 40 to 50 lac red blood cells, 4 to 11 thousand white blood cells and around two lakhs platelets in one ml density of blood. One inch contains around 25.5 ml.

On one hand, our cells work as an independent unit and on the other hand they work in synchronization with other cells and fulfill their responsibilities with full sincerity. However they should get enough glucose and vital life energy to function properly. Digestion process and respiration provide these two elements to the blood. The heart acting like pumping station supplies these two to the each and every cell. The heart has around five to five and half liters of blood for this function. Besides there is a thick network of 96 thousand km long blood veins in our body for the benefit of heart. Not only that the nature has also made arrangements for uninterrupted supply of nutritional elements and oxygen to the organ which suffer from fatty blood veins due to the habit of overeating with the help of collaterals. The fist-sized heart does so much work through out the day that can fill a tank with capacity of 15 thousand liters to the brink. In spite of performing this task continuously the heart does not stop. That is not all the heart also has the duty to remove the foreign particles, lactic acid and carbon dioxide produced due to the breaking up of glucose in all the cells, organs, parts and tissues. If these foreign particles remain in the organs then the related cell will not be able to fulfill the function properly. The heart that supplies glucose and vital life energy to various organs also removes the chemicals from these places. In other words proper blood circulation is necessary in order to fulfill all the functions right from cell to organ.

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Whatever functions take place in our body is possible only with the flexibility of the cells and each and every organ. Reduction in flexibility means the related

organ has begun to lose its capacity. The flexibility of cells and respiratory pipes reduce in case of asthma. Similarly the blood veins lose their flexibility in case of high blood pressure and heart diseases. Wrinkles are indication of flexibility of the skin. The slow pace of joints or some problem denotes lack of flexibility in the joints. If the muscles lose their flexibility then their capacity reduces. Similarly, ego, pride, arrogance, rigidity, stubbornness are examples of lack of flexibility of mind and heart.

River is flowing continuously, which means it has pace, freshness and life. The water in a pond is stagnant and hence it is dirty. The bacteria present in river water are negligible when compared to pond water. If we lock a house then it becomes an abode for dust, sand, cobwebs, termite, mosquito and then the plaster starts coming out. If the house is not cleaned for two or four days then dust accumulates in the house. This is applicable to the body organs also. Proper blood circulation supplies vital life energy to all the cells and removes the dust and foreign particles present there.

There are several millions of bacteria and chemicals in the atmosphere. They enter our body through respiration, food, skin or water and make us diseased. Nature has provided us with a strong immunity system, this includes thymus glands, tonsils, adenoids, lymphatic system and lymph glands, sweat glands, saliva glands, digestive system, liver, kidneys, lungs, are deployed at different places in order to protect the body. They rotate inside the bone marrow round the clock. Whenever a bacteria or chemicals enter the body or a cell dies then the white blood cells deployed in different organs like soldiers reach there and begin their work. It increases blood circulation. A simple example can explain this fact. When dust falls into the eyes or conjunctivitis attacks then tears are formed and eyes become red as blood circulation increases. The bone marrow also requires vital life energy and nutritional elements in sufficient quantity to make blood cells and to function properly under the immunity system. This requires effi-

cient respiratory system, digestive system and circulatory system.

Generally the palpitation increases when we do some laborious work, this is known as tidal respiration. We breathe in breathe out around 350 to 500 ml air during this process. We breathe in eight to 12 times in one minute. In this way around six to seven liter air is inhaled and exhaled in one minute but when we exercise, walk briskly or run then around 100 to 140 liter air is inhaled and exhaled.

The normal breathing capacity of a health person is known as maximum breathing capacity. It simply means we use less than 20 percent capacity of our lungs for our normal routine.

Vital capacity is another method of measuring the lung capacity; according to the Indian standard determined by the scientists the blood level in men should be 3.5 to 4.5 liters and 3 to 4 liters in women. I have noticed during my 25-year tenure at Indore Medical College that the average vital capacity of boy students was 2200 to 3400 ml and that of girl students was 1800 to 2800 ml. During the same tenure I noticed that the sportsmen had ten percent (4.5 liters) more vital capacity when compared to normal students. We can easily estimate the respiratory capacity of the youth and common man.

This is a scientific fact that if a body part is not used for several days then that organ becomes weak in its shape and work. This is known as disused dystrophy in medical parlance. This can be easily understood with the help of a simple example, the fractured bone is plastered for six week, if we do not move the fingers and related organ then it reduces the movement of that particular part, it becomes stiff and thin. The bones get back the normal movement up to 20 –25 percent with regular physiotherapy exercise.

Let us talk about the lungs, they have five times more capacity than normal, but if we have to climb five stories we start panting because we do not utilize the lungs to the fullest capacity.

Our brain contains feeding center and satisfaction center. The satisfaction centers is set on the basis of the food intake in childhood and youth depending on the satisfaction level obtained from food. Then the person gets satisfaction only when he gets that amount of food throughout the life. For example if a young boy is used to eating four chapattis, two bowls of dal, one bowl of vegetable, one bowl of rice, salad etc. then he feels satisfied only when he gets this amount of food. Then satisfied center will demand the same amount of food in order to reach the level of satisfaction even if the body energy level reduces in old age.

The body gets additional energy everyday and when it is not spent it is accumulated in the form of fat. This fat gets accumulated not only on stomach, thighs, hips, chest and calves but also in other body parts. Liver, lungs, heart, kidney, heart, digestive system and blood veins also get the benefit of additional energy. If the additional energy is not spent then the related organ becomes diseased.

The disease could be diagnosed later but the capacity starts reducing. If we do not spent the additional energy that we obtain on daily basis then the result is extra fat. The other specialists besides heart specialists also advice to spent the additional energy obtained from calories. Swimming, brisk walking, pranayam, Yog asana, gardening and household works are the best methods to burn the extra calories.

There is peripheral heart in the calf muscles besides the heart beating in the chest. The calf muscles play an important role in pushing the blood towards the heart with contraction. If we lead a comfortable and luxurious life and do not do any work or exercise then the blood circulation is obstructed. Yog and pranayam provide good health because it regulates respiration and supplies oxygen in sufficient quantity. It is an indisputable fact that pranayam has magical affect on the body. It is the undefeatable warrior to fight out the diseases. After understanding the functioning of the body we can easily understand the effect of pranayam on our body.