

HOW DOES PRANAYAM WORK?

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Our respiratory system begins from the nostrils and extends up to the lungs. The air inhaled through nose passes through voice box and pharynx and reaches the trachea. It gets divided into right and left side in the chest. It branches and sub-branches itself 17 to 18 times and makes a tree like structure of the respiratory system. The last branch is known as terminal bronchial, it also gets divided and opens into 15-20 air vesicle, which look like bunch of grapes. The blood veins also carry blood along with all the branches and sub-branches of the respiratory system. The air vesicles that expand and contract while breathing in and out and its surrounding minute capillaries consist of a thin covering which helps the easy entry and exit of oxygen and carbon dioxide. Pulmonary arteries bring impure blood from heart to the lungs and the blood that gets purified in the air vesicles is carried back to the heart through the pulmonary arteries.

The lungs are conch shaped, narrow from top and broad from bottom. The lungs spread in two-thirds of the chest are spongy and stretchable. When we breathe in, the ribs and chest muscles rise above due to contraction and the chest expands. This increases the dimensions of the chest on the right-left and front and behind. In the same way the diaphragm also contracts and goes below. In this way the dimensions of the chest increases vertically also. This helps in the entry of air into the lungs. In normal situation, 75 percent of 400 to 500 ml of air entering in is due to the shifting of diaphragm to lower side. The diaphragm moves only one and half centimeter during normal respiration. All the muscles come back to original position along with the diaphragm after inhalation. It exerts pressure on the lungs and the air moves out. This process of muscles, ribs and lungs is called elastic requital. Therefore when we breathe in the chest and stomach expand and come back to normal position when we breathe out.

In normal respiration, lungs function only up to 20 to 25 percent. The remaining 75 percent remains inactive and hence the blood flow remains very slow in the remaining portion naturally. If we do not exercise the lungs remain deprived of fresh air and sufficient blood flow. This is the reason that when we climb up stairs or mountain or run, we start panting. The reason being that the inactivate portion of the lungs is made to work suddenly.

When we practice pranayam the diaphragm moves

seven centimeters below, the muscles of the ribs also work more. Fresh air entering the lungs makes us happy, and also increases blood flow. In this way the heart situated between the lungs gets pressed from all sides, as a result it also has to work more quickly and efficiently. The oxygen demand of the cells increases which forces the heart to work more. The cells are also filled with sufficient blood circulation, vital life energy and nutritional elements due to quick flow, which were forced to do fasting in normal situation. The foreign particles lying there are also removed naturally.

This is about the changes taking place in the chest. Now let us know about the changes taking place in the stomach. The liver, 30 feet long digestive system, pancreas, spleen, kidneys, adrenal glands, urinary bladder, rectum and uterus and ovaries in case of women are situated in between the diaphragm and hipbones. When the diaphragm moves seven centimeters below then these organs become weak. Where will they move? They cannot shift to the legs. The only way out is that all the organs have to contract a little bit every time this process takes place so that the diaphragm gets five to six centimeters extra space. The anterior abdominal wall also exerts pressure instead of giving space in the front.

This internal massage benefits all the organs with the help of quick blood circulation, fresh vital life energy and nutritional elements. All the organs start functioning in synchronized manner. The glands excrete in sufficient quantity, the foreign particles are removed, quick blood flow does not suit bacteria, and the cells have increased immunity power to fight out the diseases as they get proper amount of vital life energy.

Extra blood is produced in the bone marrow. The faecal matter accumulated in the intestines is thrown out. The food consumed gives positive results and strengthens the body. Quick blood flow strengthens the central nervous system and all its cells and makes them hundred percent efficient. Therefore it improves memory power, grasping power, logical and analytical skills. It also increases patience and wisdom. Anger, ego, greed, attachment, addiction start losing their existence. To conclude the definition of a healthy man explained in Ayurved starts happening in real life, 'प्रसन्नात्मेन्द्रियमना स्वस्थ इत्यभिधीयते' in other words the blissful state of body, sensory organs, mind and soul is real health.