

YOGA RESEARCH

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What is Health? PART II

excerpted from *Prāṇāyāma* by Swami Kuvalayanandaji

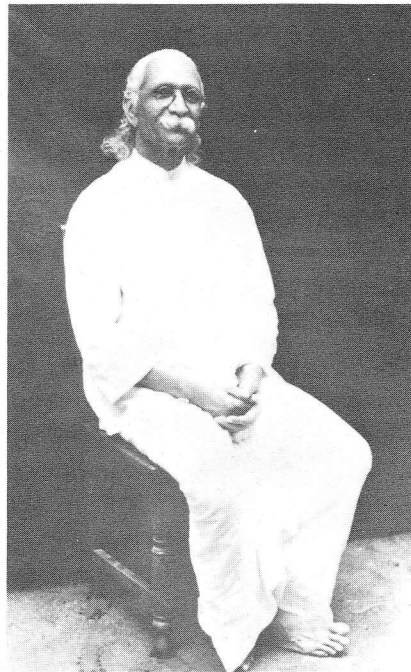
We shall now examine how *Prāṇāyāma* helps the efficient functioning of the most important physiological systems of the human body.

Starting with the organs of elimination, we find that the bowels and kidneys are situated in the abdomen and the lungs in the chest. In normal respiration the alternate rise and fall of the diaphragm and the alternate contraction and relaxation of the abdominal muscles give constant movement and gentle massage to the bowels and the kidneys.

During *Prāṇāyāma* in both inspiration and expiration as well as in retention of breath, this movement and massage are greatly accentuated. If there is any congestion, it is relieved because of the pressure exerted. The nerves and the muscles which control the functions of the bowels and kidneys are toned. The nerves and the muscles once toned up continue to maintain that tone for a considerably long time. Thus the bowels and kidneys derive benefit not only while *Prāṇāyāma* is being practiced, but for the remaining part of the day as well. They are rendered healthier due to *Prāṇāyāma*, therefore carrying on their function of elimination more effectively.

The same is the case with the lungs. Healthy respiration depends upon strong respiratory muscles and good elasticity of the lungs. On the physical side, *Prāṇāyāma* is a culture of these muscles and the lungs. By opening the chest to its fullest extent several times a day, and giving the lungs their utmost stretch, these organs are best educated to perform their functions satisfactorily. As in the case of the bowels and kidneys, so in the case of the lungs – the training given to them for a short time, prepares them for efficient working during the remaining part of the day. Thus *Prāṇāyāma* is a very valuable exercise for the organs of elimination.

Organs of digestion and absorption do not stand on a different level so far as the effects of *Prāṇāyāma* are concerned. The stomach, the pancreas and the liver play a very prominent part in the digestion of food and drink. They are all exercised in *Prāṇāyāma* due to the massage given them



by the diaphragm and the abdominal muscles. In a very large number of people who are dyspeptic and constipated, the liver becomes habitually congested and consequently faulty in function. *Prāṇāyāma* is an excellent exercise for relieving this congestion. An unhealthy pancreas gets very good stimulus and correction by *Prāṇāyāmic* exercises. In our clinical experience we have a number of cases effectively relieved of gastric disorders, mainly as a result of *Prāṇāyāma*. With a perfectly functioning digestive system, absorption also becomes perfect, and the blood is enriched with the necessary nutritive elements.

A liberal supply of oxygen to the circulating blood current is of supreme importance

for health. This supply is effectively improved by *Prāṇāyāma*. This is not because during the process of *Prāṇāyāma* an individual absorbs a large quantity of oxygen, but because of the respiratory system training which helps the individual for twenty-four hours. The *Prāṇāyāmic* exercises so train the respiratory apparatus that, during the remaining part of the day, respiration is carried on most efficiently and larger quantities of oxygen are absorbed.

For the practice of *Ujjāyī* breathing, we have recommended the rate of four rounds in a minute. This is for ordinary purposes of physical culture, where only *Recaka* and *Pūraka* are performed. It is to be noted that when four rounds of *Ujjāyī* are performed in a minute, the quantity of oxygen absorbed even during the *Prāṇāyāmic* process, is much larger than ordinary respiration.

With the efficient functioning of the organs of digestion, elimination and respiration, the quality of the blood remains satisfactory. Now this blood is to be distributed to the different tissues of the body. This is the duty of the circulatory system and especially of the heart.

It has been admitted even by Western scientists that practices in deep breathing give a gentle massage to the heart. We have carefully studied the pressure changes that are produced roundabout the heart in *Prāṇāyāma*. And we are happy to note that the technique of *Prāṇāyāma* as it is given in Yoga, establishes conditions much more favorable for this massage, than the conditions secured in the Western type of deep breathing. Now the heart which is the principal organ of circulation being made healthier, the whole circulatory system works satisfactorily.

But the matter does not end there. In *Bhastrikā*, especially in its part which



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So long as breath is unsteady,
 the mind remains unsteady;
 when (it) is still, (the mind)
 becomes still.

Hathapradīpikā

corresponds to Kapālabhāti, vibrations start and spread themselves to nearly every tissue in the human organism, the arteries, the veins and the capillaries included. Thus the whole circulatory system is exercised and massaged during Prāṇāyāma, and is prepared for efficient functioning.

Next we come to the nervous and the endocrine systems. The rich quality of the blood and its satisfactory distribution to all the nerves and glands ensure their health. During Prāṇāyāma, and especially during Bhastrikā, the circulation of the blood becomes very rapid and the quality of the blood is also rendered very rich. (Evidence on this point has already been collected in our laboratory). This richer and more liberal blood supply brought to the endocrine glands makes them healthier. The same is the case for the brain, the spinal cord, the cranial and the spinal nerves and the sympathetic.

The advantage derived from a richer and more liberal blood supply is not the only advantage the nervous system gets from Prāṇāyāma. The nerves are directly exercised.

During Pūraka the diaphragm is contracted and lowered and the abdominal muscles are kept controlled, that is, slightly contracted. The combined action of the diaphragm and the abdominal muscles pulls up the lower part of the spinal column. If Jālandhara-Bandha is practiced the upper part of the spinal column is also pulled up. This pulling up of the vertebral column as a whole, gives

exercise to the sympathetic and the roots of the spinal nerves.

Limitations of this handbook do not allow us even to make a passing reference to the exercise of the brain by the Prāṇāyāmic processes. Suffice it to say that the whole nervous system is very finely exercised by the practice of Prāṇāyāma.

Thus the nervous and the endocrine systems which are of supreme importance in human physiology and also the respiratory, the circulatory and the digestive systems upon which the health of the first two systems depends, are all simultaneously exercised in Prāṇāyāma.

Every round either of Ujjāyī or Bhastrikā makes the organism healthier. In fact the Yogic seers of ancient India looked upon Prāṇāyāma as the one exercise that could make every life process supremely healthy. From our own experience we can safely say that no physical exercise can even have one hundredth of the efficacy of Prāṇāyāma. In fact Prāṇāyāma is not only the control of the different physiological functions, but it is the control of the very life processes that vitalize the human organism.

excerpted from *Prāṇāyāma* (1931)
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