

.....

**THE EFFECTS OF YOGIC PRACTICES AND PHYSICAL EXERCISES ON  
THE SELECT PHYSIOLOGICAL BIO-CHEMICAL AND PSYCHOLOGICAL  
VARIABLES AMONG DIABETIC PATIENTS**

.....

**S.R.V. Ravindran**

*Director of Physical Education, Associate Professor, Sourashtra College, Pasumalai, Madurai.*

**Abstract**

Yoga is one of the size orthodox systems of Indian philosophy. It was collated, coordinated and systematized by Patanjali in his classical work, the yoga sutras, which consists of 185 terse aphorisms. In Indian thought, everything is permeated by the supreme universal spirit (paramatma or God) of which the individual human spirit (jivatma) is a part. The system of yoga is called so because it teaches the means, by which the jivatma can be united to, or be in communion with the paramathma, and so secure liberation (moksa). Yoga has also been described as 'wisdom in work or skilful living amongst activities, harmony and moderation'. "Yoga is not for him who gorges too much, nor for him who starves himself. It is not for him who steps too much, nor for him who stays awake. By moderation in eating and resting, by regulation in working and by concordance in sleeping and waking, yoga destroys all pain and sorrows".

**Keywords:** Orthodox, Patanjali, Jivatma, Paramathma, Moksa.

**Introduction**

Yogasanas are Indian's unique contribution to physical education. Yoga and physical education may be compared to two bullocks hitched to shaft as they are for the judicious blending of the education of the body and the mind. There is no denial of the fact that yoga and physical education attach importance by gaining the benefits of physical health, mental health, physical fitness and peace of mind through their regular practices. Physical education concerns anatomical aspects of the physique with its physiological reactions for a given activity, the ultimate aim of which is to enjoy a good health and optimum fitness. Yoga is providing a multidimensional development and it has now become an adjunct to physical education.

According to Swami Satyaand Saraswathi "Yoga is not an ancient myth buried in oblivion. It is the most valuable inheritance of the present. It is the essential need of today and the culture of tomorrow".

**Postures of Yoga**

The yoga postures (known as asanas), help to stretch and relax the muscles and skeletal system. The physical release through these soothing movements can help create a sense of calmness and well-being. Physical exercise of any kind will help people with high

levels of anxiety, and yoga postures have the added bonus of specifically generating deep muscle relaxation while toning at the same time. Yogasanas are performed slowly with relaxation and concentration. In this way, both the external and internal systems are influenced, so that the nervous systems, endocrine glands and internal organs as well as the muscles are encouraged to function properly. Thus asanas have a physical and psychosomatic effect, which is helpful in curing infirmities. Asanas can be done for both healthy and unhealthy people, young and old. They are most useful for both concentration and meditations. Other systems of physical culture increase the toxins in the body, whereas asanas reduce the toxins level.

#### **Selection of Asanas**

The experimental factor selected is the yogasanas and it's been innumerable. So, the scholar consulted with experts in the field of yoga, than selected the following yogic practices

#### **Pavanamuktasana**

1. Lie down on your back with legs stretched out and arms on the sides.
2. Rest your palms on the ground.
3. Inhale and lift your legs up and keep it perpendicular to the ground.
4. Fold your legs at the knee and bring the knees close to your chin.
5. The thighs should rest on the abdomen.
6. Keep the knees and ankles of both legs together.
7. Wrap your arms around the knees.
8. Try to catch the elbows of the opposite hands.
9. Raise your head above the ground.
10. Bend your neck and try to touch the forehead on the knees.
11. Breathing normally, maintain this posture for some time.
12. Straighten your neck and bring your head back to the ground.
13. Release your knees and bring the hands to the sides.
14. Inhale slowly and lift your legs up to make 90 degrees with the ground.
15. Exhale and bring the legs back on the ground.

#### **Benefits:**

1. The pose cures flatulence.
2. It gives relief from constipation and also improves the digestive system.

#### **Surya Namaskar**

Surya Namaskar signifies paying homage to Sun deity. It is a very ancient Indian System of exercise. Surya Namaskar is a graceful combined sequence of twelve positions.

Through this sequence of twelve positions, the whole body is well exercised. Surya Namaskar also improves eye luster. As a matter of fact, these twelve positions are divided into the initial position and the final position. As all these exercises are simple, everyone can do them easily. These twelve positions make one complete Surya Namaskar and twenty-five such Surya Namaskar make one round. Surya Namaskar should be practiced always in an open and clean place.

### **Gomukhasana**

Sit in Dandasana (Staff Pose), then bend your knees and put your feet on the floor. Slide your left foot under the right knee to the outside of the right hip. Then cross your right leg over the left, stacking the right knee on top of the left, and bring the right foot to the outside of the left hip. Try to bring the heels equidistant from the hips: with the right leg on top you'll have to tug the right heel in closer to the left hip. Sit evenly on the sitting bones. Inhale and stretch your right arm straight out to the right, parallel to the floor. Rotate your arm inwardly; the thumb will turn first toward the floor, and then point toward the wall behind you, with the palm facing the ceiling. This movement will roll your right shoulder slightly up and forward, and round your upper back. With a full exhalation, sweep the arm behind your torso and tuck the forearm in the hollow of your lower back, parallel to your waist, with the right elbow against the right side of your torso. Roll the shoulder back and down, then work the forearm up your back until it is parallel to your spine. The back of your hand will be between your shoulder blades. See that your right elbow doesn't slip away from the right side of your torso. Now inhale and stretch your left arm straight forward, pointing toward the opposite wall, parallel to the floor. Turn the palm up and, with another inhalation, stretch the arm straight up toward the ceiling, palm turned back. Lift actively through your left arm, then with an exhalation, bend the elbow and reach down for the right hand. If possible, hook the right and left fingers. Lift the left elbow toward the ceiling and, from the back armpit, descend the right elbow toward the floor. Firm your shoulder blades against your back ribs and lift your chest. Try to keep the left arm right beside the left side of your head. Stay in this pose about 1 minute. Release the arms, uncross the legs, and repeat with the arms and legs reversed for the same length of time. Remember that whichever leg is on top, the same-side arm is lower.

### **Vajrasana (Technique)**

1. With knees, ankles and big toes touching the ground, take a kneeling position.
2. One should sit on the heels and place palms on the knees.
3. The spine should be erect and breath should be deep.
4. Draw the abdominal region inside and expand the chest.

**Advantages**

1. Those suffering from blood pressure will benefit from this asana.
2. It gives longevity and strengthens the spine.

**Paschimottanasana (Technique)**

1. Sit on a mat with legs stretched straight out in front.
2. Breathe out. Slowly bend forward, trying to touch the feet. Don't bend the knees.
3. Exhale while returning to normal position.

**Advantages**

1. It stretches the back and spine, shoulders and hamstring muscles.
2. Beneficial for the kidneys, liver, ovaries and uterus.

**Ardhamatsyendrasana**

Look out over the right shoulder, but don't overturn the neck the twist originates in the belly, not the neck. On each inhale, draw the spine long, and on each exhale, twist a little deeper. Press the right hand against the floor just behind your right buttock, and set your left upper arm on the outside of your right thigh near the knee. Stretch your arms out to the sides at shoulder level, and twist around to the left. Now bring the right arm down on the outside of the left knee and hold your left foot with your right hand, placing your left hand on the floor behind you. Lean the upper torso back slightly, against the shoulder blades, and continue to lengthen the tailbone into the floor. You can turn your head in one of two directions: Continue the twist of the torso by turning it to the right; or counter the twist of the torso by turning it left and looking over the left shoulder at the right foot. Be sure to keep the sole of your right foot flat on the floor. When you release the pose, take a slight counter twist to the opposite direction. Release the legs and switch their position as you prepare to twist to the other side. Twist a little more with every exhalation. Be sure to distribute the twist evenly throughout the entire length of the spine; don't concentrate it in the lower back. Stay for 30 seconds to 1 minute, then release with an exhalation.

**Benefits:**

- Opens the shoulders, neck and hips while stretching the spine. Cleanses the internal organs.
- Therapeutic for asthma and infertility.

**Bhujangasana (Technique)**

- Turnover on the stomach and place the hands on the floor beside the pectoral muscles.
- Place the hands, palms down, under the shoulders on the floor.

- Inhaling, without lifting the navel from the floor, raise the chest and head, arching the back. Obtain as complete a stretching of the body as possible.
- Retain the breath and then exhale while slowly lowering to the floor.

**Advantages**

- It gives effect on the adrenal glands, sending them a richer supply of blood.
- It tones ovaries, uterus and liver.

**Sarvangasana (Technique)**

- Lie flat on the back. Inhale deeply while raising the legs and spine until the toes point to the ceiling.
- The body rests on the shoulders and the back of the neck. The body is supported by the hands, which are placed on the center of the spine between the waist and the shoulder blades. Keep the spine and legs straight.
- Breathe slowly and deeply with the abdomen and concentrate on the thyroid gland.
- To come out of this posture, just bend the knees, curve the back and slowly return to lying on the floor while exhaling.

**Advantages**

1. The main benefit of the shoulder stand is to get the thyroid gland working at peak efficiency.
2. The shoulder stand also regulates the sex glands.

**Halasana (Technique)**

1. Lie flat on the back with the arms stretched by the side of the body, palms flat on the ground.
2. Place the legs together and keep them straight.
3. Inhale and raise the legs up slowly.
4. Inhaling and the raising of the legs up should be simultaneous.
5. Do not bend the knees and not raise the arms.
6. To lower the legs over the head till the toes touch the ground.
7. Keep the knees together and straight.
8. Breath normally till the asana is completed.

**Advantages**

- This asana nourishes the blood vessels of the spinal column.
- It makes the spine flexible and elastic.

**Matsyasana (Technique)**

1. Lie on the back with the knees bent and arms at the side.
2. Arch back as much as can while raising it off the ground by pushing the floor with elbows. At the same time, throw head backwards, resting the crown of the head on the floor. Use the forearm and elbows to support.
3. Expand the chest. Breathe deeply with the abdomen and concentrate on the thyroid gland.
4. Stay in this position for about one minute. Slowly come back to the starting position.

**Advantages**

1. The fish posture normalizes the function of the thyroid, pituitary, pineal and adrenal glands.
2. This posture benefits people with asthma.

**Savasana (Technique)**

1. Lie down on the back, in a quiet place.
2. Place the arms beside the body, palms upturned.
3. Keep heels slightly apart.
4. Breathe slowly and deeply, feeling a sense of calm relaxation come over the whole body.

**Advantages**

1. Stimulates blood circulation and exercises inner organs.
2. It improves mental concentration.

**Pranayama**

“Pranayama” literally means “to expand Prana”. In the 49<sup>th</sup> Sutra of Sadhanapada of PatanjaliYogastura, the great Rishi Patanjali has defined Pranayama as a process in which respiration is interrupted and Prana, that is the vital force, is controlled and regulated. Prana is the vital power which is the force motivating every element force and intellect, between intellect and soul and between soul and God. Thus, the purpose of Pranayama is to inspire, motivate, regulate and balance the vital force pervading the body. This is the reason why Pranayama is considered as one of the efficacious means of attaining Yoga.

**Nadi Sudhi Pranayama (Technique)**

1. Close your eyes or let them relax so they are slightly open. Using either hand, first stretch out your fingers and then bend in your middle and index finger. The thumb and ring fingers are going to be used to close the nostrils alternately to breathe in through one nostril and out through the other.
2. Sit on the favourite Asana (Padma asana, Vajra asana or Sukh asana) in a well ventilated room free from any distractions.

3. Keep the waist, back, neck and spine erect.
4. While retaining the hand position, block the left nostril (using the ring finger, if you use your right hand), while breathing out through the right nostril.
5. Still keeping the left nostril closed, breathe in through the right nostril.
6. Now open the left nostril and close the right nostril with your thumb and breathe out.
7. Keeping the left nostril open, breathe in through the left nostril, then close the left nostril and breathe out through the right side.
8. Steps 1-4 comprise one cycle. Repeat 10 cycles to start with. The duration can be increased with increased comfort and practice.

**Advantages**

1. Cleanses and tones the entire nervous system.
2. Relieves symptoms of disorders of the respiratory tract

**Bhramari Pranayama (Technique)**

1. Sit on the favourite Asana (Padma asana, Vajra asana or Sukh asana) in a well ventilated room free from any distractions.
2. Keep the waist, back, neck and spine erect.
3. For the beginners, you can sit on a chair or sit cross legged on the yoga mat/carpet keeping the back, neck and spine erect.
4. Cover both ears with the thumb so that you don't hear anything.
5. Place two fingers on the eyes and two fingers on the face.

**Advantages**

1. It is tremendous breathing exercise for meditation and helpful for Kundalini Awakening.
2. It has immediate positive effect on ears, nose, eyes and mouth.

**Bhastrika Pranayama (Technique)**

1. Sit in comfortable asana like Padmasana, Siddhasana or Sukhasana.
2. Spinal cord must be straight.
3. Bhastrika is similar to the working of 'bellows'. 'Breathe in' and 'breathe out' forcefully.
4. Take the breath inside as deep as possible to fill the lungs and then exhale out completely to evacuate lungs.
5. Breathe in and breathe out with equal force.
6. The breath should be filled in lungs up to the diaphragm, not in stomach.
7. Do not stop the breath during this process.

8. This is one cycle completed. Repeat this process several times. Do not try to over practice, stop immediately when you feel tired.
9. Depending upon the capacity and health of the practitioner, it can be done in three variable speeds viz. slow, moderate and at high.

#### **Advantages**

1. Bhastrika is excellent for physical body as well as spirituality of an individual.
2. It makes the mind peaceful and calm so as to help in Kundalini Awakening.

#### **Yoganidra**

Yoga Nidra is a highly powerful ancient meditation technique originated from the Tantras. It is the scientific way to eliminate the root cause of all the negativities. YogaNidra enables the person to be conscious in this state and nurture the seed of great will power, inspire the higher self, and enjoy the vitality of life. So the nature of mind can be changed as required, because when you withdraw your mind from outer world and you are neither in deep sleep nor completely awake, whatever impressions you plant at that time grow and enrich our life. YogaNidra the wholistic relaxation technique.

#### **Benefits of Yoga Nidra**

Yoga nidra induces deep relaxation at all the levels - physical, mental and emotional. Yoga nidra can be used to change the nature of mind along the positive lines. The quality of sleep improves dramatically by practicing yoga nidra. The work efficiency increases manifolds by practicing yoga nidra. Yoga nidra is highly effective in removing stress. The diseases like insomnia, hypertension, depression, asthma, digestive disorders, migraine and ulcers can be cured by yoga nidra.

#### **Conclusion**

Modern industrialization has resulted in a more inflating metabolic disorder like obesity. Hence, the effect of training can be assessed among obese people and overweight people. The yogic practice group and physical exercise groups significantly reduced the anxiety, and increased the self-confidence and achievement motivation for both the yogic practice group and physical exercise groups, but in favor of yogic practice group.

#### **References**

- Costanzo, Linda S. **Physiology**, Philadelphia: W.B. Saunders Company, 1998.
- Desai, D.B. **Research on Achievement Motivation**, London: Macmillan Book Company, 1970.
- McClelland, **An Introduction to Motivation**, New Jersey: Prentice Hall Inc., 1964.