International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 4 Issue 6, September-October 2020 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

Anatomical Exploration of Shavasana and its Physical and Mental Benefits

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ABSTRACT

The term *Yoga* is originated from the Sanskrit root *yuj* which means to bind, join, attach and yoke, to direct and concentrate one's attention on, to use and apply. It also refers to union or communion. It is the true union of our will with the will of God. *Yoga* is performed through some specific postures called *Asana*. Among the eight limbs of *Yoga*, the yogic technique properly begins at the third limb that is the *Asana*. The word *Asana* is well known around the world for the yogic posture into which the whole science of *Yoga* is shrinking. Patanjali defines *Asana* as '*Sthirasukhatvam*" in *Yogasutra* which can be translated as stable and agreeable. The benefits of *Asana* range from physical to spiritual level. *Asana* not only tone the muscles, ligaments, joints and nerves but also maintains the smooth functioning and health of entire body. "*Shavasana*" was described as one of the 32 most important *Asana* in *Gheranda Samhita*. This pose appears as the posture of a dead body and is, hence, named after it. *Shava* meaning "corpse", and *Asana* meaning "posture". The corpse posture can both antecede and follow a session of *Hatha Yoga* postures.

KEYWORDS: *Anatomy, Asana, Joint, Shavasana, Muscle, Yoga*

How to cite this paper: Dr. Somlata Jadoun | Dr. Sunil Kumar Yadav "Anatomical Exploration of Shavasana and its Physical and Mental Benefits" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-4 | Issue-6, October 2020, pp.1823-1826, URL: www.ijtsrd.com/papers/ijtsrd35813.pdf

IJTSRD35813

INTRODUCTION

"*Shavasana"* was defined as one of the 32 most important *Asana* in *Gheranda Samhita* (dated around 1650 CE). The *Gheranda Samhita* is the most encyclopaedic of the three-classic text about *Asana*. It says that there are 8,400,000 of *Asana* described by *Shiva*. The postures are as many in number as there are numbers of species of living creatures in this universe. Among them 84 are the best, and among these 84,32 have been found useful for mankind in this world the 32 *Asana* are mentioned in *Gheranda Samhita*.[1]

Shavasana appears as the posture of a dead body and is, hence, named after it. In *Sanskrit* Shava meaning "corpse", and Asana meaning "posture". The corpse posture can both antecede and follow a session of *Hatha Yoga* postures.[2]

Need of Study

In this article the essential quest of *Asana* practitioner about the anatomical structures involved in the *Asana* and how this involvement is beneficial in maintaining Physical and mental health or in management of any disease.

Aim and Objectives -

- To explore the anatomical structures involved in "*Shavasana*."
- To avoid possibilities of injuries while performing *Shavasana* by understanding the anatomical structures involved in "*Shavasana*".

Material and Methods -

1. Review of *Yoga-Asana* literature from *Yoga* Classics including relevant commentaries.
2. Other print media, online information, journals, magazines etc.

Review-

Lying flat on the ground like a corpse is called the *Mritasana*.[3]

According to *Hath Yoga Pradipika*, lying down on the ground, like a corpse, is called *Shavasana.*[4]

In *Hathratnavali, Shavasana* illustrated as Spread out the hands and legs, while lying relaxed.[5]

According to *Swami Kuvalayananda*, the technique of *Shavasana* is simple to understand but somewhat difficult to practice. It is as following, the student has to lie on his back, and fully relax his muscles. It is to be noticed here that our muscles should remain slightly contracted even when we lie down for the rest. Even this slight contraction has to be avoided in the dead pose.[6]

In opinion of *Swami Vyas Dev ji,* lay down on your back. Inhale and get the air to the maximum capacity so that the whole body gets stiff like a plank of wood. The body should be so stiff that it could be raised erect by lifting the head only. Same also, by lifting the feet only the whole body will remain erect on the head.[7]

According to *B.K.S Iyengar*, in this *Asana* the object is to metamorphose a corpse. Once life has expired, the body persist to be still, and no movements are possible. By being motionless for some time and keeping the mind still while you are fully conscious, one learns to relax. This conscious relaxation energizes and refreshes both body and mind. But-it is much harder to keep the mind still than the body. Therefore, this visibly easy posture is one of the most difficult to master.[8]

Steps for Performing "*Shavasana*"

- Lie flat and straight on the back.
- Place both the arms at 15 cm (approx.) away from the body. Keep both the palms facing in the upward direction.
- Move both the feet a bit, so that they are slightly apart and make you feel comfortable. Then, close both the eyes.
- Keep the head and the spine in a fully straight line.

Contraindications-

Those who suffers from-

- Back injuries
- Severe acidity patient
- Very distracted mind

Image:

Shavasana

Anatomical Exploration of *Shavasana*-

Muscles and ligaments involved in *Shavasana*.

In this posture the muscles of the whole body will be in relax position.

Joint actions

- Forearms are supinated.
- Knee are laterally rotated.

Forearm

Supination of forearm is produces by supinator and biceps brachii muscle. This Movement is produced by the head of the radius rotating within the annular ligament. Supinator muscle is the muscle of deep muscles of the posterior compartment of forearm and biceps brachii is the muscle of anterior compartment of arm.

Table 1 Muscles performing forearm supination

Muscle	Position	Nerve supply
Supinator	Posterior compartment of forearm	Radial nerve (C6-C8)
Biceps brachii	Anterior compartment of arm	Musculocutaneous nerve(C5-C6)

Table 2 Muscles which are stretched during supination of forearm

Muscle	Position	Nerve supply
Pronator teres	Anterior compartment of forearm	Median nerve (C6, C7)
Pronator quadratus	Anterior compartment of arm	Median nerve (C7, C8)

Knee joint

External (Lateral) Rotation of the knee joint in this pose. Lateral rotation of knee joint is possible when the leg is in the flexed position. The lateral rotation of leg is done by the biceps femoris. The muscles are slightly stretched especially the medial rotators of knee. In *Shavasana* the extensor compartment or anterior compartment of thigh and the medial rotators of knee are stretched. This compartment consists of quadriceps femoris which includes rectus femoris, vastus lateralis, medialis and intermedialis. In *Shavasana* there is not much stretch at knee joint.

Benefits-

1. Physical Benefits
2. Mental Benefits

Physical benefits

1. High Blood pressure control-

Cardiac output and peripheral resistance are the key determinants of blood pressure. Blood pressure and heart rate are important cardiovascular parameters. Both are controlled by autonomic nervous system mediated via baroreceptor reflex mechanism. Cardiac output is product of stroke volume and heart rate. Stroke volume increases with increase in venous return and increased force of contraction of heart and vice-versa. Increase in sympathetic activity increases venous return by producing vasoconstriction in splanchnic circulation and other parts of the body and also increased force of contraction of heart leading to more pumping of blood in each cardiac cycle leading to increased

systolic blood pressure. Increased sympathetic activity also produces vasoconstriction pressure. Impulses of buffer nerves from arterial baroreceptors reach the medulla and affect the heart rate via vagal discharge to the heart. The neurons from which the vagal fibres arise are in the dorsal motor nucleus of the vagus and the nucleus ambiguous. So, increased sympathetic activity is responsible for increased cardiac output and heart rate and vice versa. Any manoeuvre which can decrease the sympathetic activity will decrease blood pressure, cardiac output, total peripheral resistance and heart rate. Shavasana results in decrease in sympathetic activity and also increase in parasympathetic activity. As a result of this decrease in sympathetic activity there is vasodilatation which causes decrease in peripheral resistance. It also decreases heart rate and myocardial contractility leading to decreased cardiac output. Decrease in cardiac output and peripheral resistance both results in decrease in systolic as well as diastolic blood pressure. So Shavasana can be a useful exercise for the patients suffering from hypertension and other cardiac disease and other stress related problems.

2. Anti-stress effect

During stress, increased release of neurohumoral agents by the sympathetic nervous system activates the enzyme adenyl cyclase present in the cell membrane of each cell of the body. This adenyl cyclase activates 3-5 cyclic-AMP, which in turn converts ATP to ADP and releases energy. The energy thus released stimulates functioning of each cell. So, the heart beats more rapidly, endocrine glands release more hormones and generalized vasoconstriction occurs due to stimulation of smooth muscle of blood vessels. The most notable feature of Shavasana is the capability of inducing a coordinated psycho physiological response, which is anti-thesis of stress response. This "Relaxation response" consists of generalized reduction in both cognitive and somatic arousal as observed in modified activity of hypothalamic - pituitary axis and autonomic nervous system.

3. Reduce Anxiety levels

Shavasana practice has been shown to increase the level of gamma-amino butyric acid, or GABA, a chemical in the brain that helps to regulate nerve activity. GABA activity is reduced in people with mood and anxiety disorders. GABA is a Neurotransmitter. Exercise in general increases production of feel good neurotransmitters like serotonin and euphoriants and a stimulant Vaughn. Shavasana does not release these stimulants but it does produce the endorphins and euphoriants, as well as something called Gamma-Amino butyric Acid (GABA). GABA is an inhibitory neurotransmitter; it works to "inhibit" the massive amounts of information being synapsed throughout motor neurons. The stronger the inhibitory signals are, the easier it is to settle down our over active responses. Lying down in Shavasana will allow these feel-good chemicals to flood our system.

4. Decrease in Metabolic rate and Oxygen consumption

Regular practice of Shavasana are associated with reduction in catecholamine secretion, a decrease in sympathetic and corresponding increase in parasympathetic Activity, reduction in metabolic rate and oxygen consumption and salutary effects on cognitive therapy.

Mental benefits

In lying posture as well as in Shavasana the whole body remains in a well-supported condition where the center of gravity is nearest to the ground. Naturally, when the extensors and flexors are not required to work against the gravitational force, they are greatly relaxed. Thus, the force required of the heart to pump blood against gravity is reduced to a great extent. The person practicing Shavasana remains inwardly alert but is less conscious of the external environment. In Shavasana, sensory stimulation and external distractions are ultimately minimized to help the body completely relax. With a grounded body, mental energy can be channeled inward and the mind can start to explore the body from the inside. Practice will increase body awareness and enteroception. Enteroception is insight on the physiological condition of the body and is associated with the autonomic nervous system and autonomic motor control. The autonomic nervous system is in control of the normally unconscious and automatic bodily functions like breathing, the heartbeat, and the digestive processes. Enteroception is also linked to the formation of subjective feeling states. In summary, practicing Shavasana may increase the ability to notice things like the body's breathing and heartbeat as well as form calmer and more relaxed feeling states. For this reason, increased enteroception has been linked to decreased signs and symptoms of anxiety and depression. In addition, Shavasana is known as a great way to calm the mind, reduce stress and fatigue, lower blood pressure, relieve headache pain, and improve sleep.

Discussion

The Body is in relaxed position. This *Asana* relaxes the whole psycho-physiological system. It should ideally be practiced before sleep, Before, during and after *Asana* practice, particularly after dynamic exercises such as *Surya Namaskar*, and when the practitioner feels physically and mentally tired. It develops body awareness. When the body is completely relaxed, awareness of the mind increases, developing *Pratyahara*. It relaxes whole body. It releases stress, fatigue depression and tension. *Shavasana* improves concentration and cures insomnia. This posture conveys a profound meditative state of relaxation, which may help in the restoration of tissues and cells of the body.

Shavasana has been proposed for brief lifestyle change and stress management. The aim of *Shavasana* is to achieve the complete physical and mental wellbeing of an individual. The main advantage of *Shavasana* is that it produces no untoward effects and does not need any complex equipment. Regular practice of *Shavasana*, the sub cortical regions of the brain dominate while conventional physical exercises, the cortical regions of the brain dominate.

Conclusion

Shavasana is the very effective relaxation *Asana*, it relaxes the whole body. At beginning it calm the whole body and concentrates the mind in preparation to follow, at the end it relaxes from head to toe and integrates awareness. It should be practiced before sleep, Before, during and after *Asana* practice particularly after dynamic exercises such as *Surya Namaskar*, and when the practitioner feels physically and mentally tired. According to *Gheranda Samhita*, this *Asana* removes tiredness, and destroy the anxiety of the mind. This *Asana* should not be practiced when the mind is distracted.

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