



ISSN 2456-3110

Vol 8 · Issue 8

August 2023

Journal of
**Ayurveda and Integrated
Medical Sciences**

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences



Maharshi Charaka
Ayurveda

Indexed

Anatomical exploration of *Halasana*

Rashmi Anil Lakhani¹, GB Sharma²

¹Post Graduate Scholar, Dept. of Rachana Sharir, Government Ayurved College, Nagpur, Maharashtra, India.

²Professor, Dept. of Rachana Sharir, Government Ayurved College, Nagpur, Maharashtra, India.

ABSTRACT

The word "Yoga" comes from a Sanskrit root "Yuj" which means union, or yoke, to join, and to direct and concentrate one's attention.^[1,2] It is a form of mind-body fitness that involves a combination of muscular activity and an internally directed mindful focus on awareness of the self, the breath, and energy.^[3] Among the eight limbs of Yoga, the Yogic technique properly begins at the third limb that is the Asana.^[4] Patanjali defines Asana as 'Sthirasukhatvam' in Yoga Sutra which can be translated as stable and agreeable. The benefits of Asana range from physical to spiritual level. Asana not only tones the muscles, ligaments, joints and nerves but also maintains the smooth functioning and health of the entire body. Anatomy^[5] is basically a branch of science that deals with the study of the structures of organisms and hence, anatomy Yoga is all about understanding the inner structure of the body and its different parts and learning how Yoga poses and other practices bring changes in the body. It also revolves around the layers of the mind and energies flowing within a body. In short, Yogic anatomy teaches you in detail everything related to body organs, muscles, tissues, etc. It is important for everyone to have an in-depth knowledge of body structure so that it becomes easy for them to learn body movements, maintain alignments, and identify other functions. *Halasana* word comes from the word *Hala* means plow and *Asana* means posture in Sanskrit. It helps to keep the spine healthy.

Key words: Anatomy, Asana, Yoga, Halasana.

INTRODUCTION

The word Yoga comes from Sanskrit root Yuj means unite or to join.^[1] Yoga philosophy and practice were first described by Patanjali in the classic text, Yoga Sutras, which is widely acknowledged as the authoritative text on Yoga.

Halasana is the Sanskrit name in which *Hala* means plough^[6], whereas *Asana* means pose or posture.^[7] Thus, it is referred to as the Plough Pose because the final position of the body appears in the shape of an

Indian Plough (farming tool) while performing this *Asana*. *Halasana* may help to keep your spine healthy and youthful. The earliest mention of this pose can be found in the 19th century literature text – *Sritattvanidhi* as *Langalasana*. This means Plough Pose in Sanskrit.^[7]

The plough tool helps to loosen soil and resurface fresh nutrients for sowing. In the same way, performing *Halasana* stretches the back of the body and aids in loosening the tight hamstrings, helping strengthen and re-energise the entire spine. It is said that people who perform *Halasana* regularly are highly active, quick, light-footed and full of spiritual energy.^[8]

Halasana has two variations:

- **Ardhahalasana** - This *Asana* is also called the Half Plough posture. It involves maintaining the position of the legs at a 90° angle and the body appears half the shape of an Indian plough.^[9]
- **Halasana** - It is also referred to as Full Plough Posture. It involves bending forward while lying on the back with stretching feet and hands on the floor.^[8,10]

Address for correspondence:

Dr. Rashmi Anil Lakhani

Post Graduate Scholar, Dept. of Rachana Sharir, Government Ayurved College, Nagpur, Maharashtra, India.

E-mail: rashmilakhani25@gmail.com

Submission Date: 08/06/2023 Accepted Date: 14/07/2023

Access this article online

Quick Response Code



Website: www.jaims.in

DOI: 10.21760/jaims.8.8.26

Halasana is an intermediate level inverted posture in *Hatha Yoga*. Energetically, the regular practice of this pose works on the *Manipura* (Solar Plexus) and the *Vishudhi Chakra* (Throat). *Manipura* (Solar Plexus) is the seat of digestive fire and is associated with self esteem, balance and strength. Meanwhile, *Vishudhi Chakra* (Throat) is responsible for communication, self-expression, willpower and choice. Regular practice of this pose stretches the spine and improves digestion, flexibility and tones the spinal nerves. This in turn improves the operation of the sympathetic nervous system. It also regulates the activities of the thyroid glands which are responsible for the body's metabolic rate.

Need of the study

- As a sedentary lifestyle is increasing, it can result in various ill effects. Knowledge of anatomical principles can aid in understanding the beneficial effects of practicing *Yoga Asana*.
- In the contemporary time, everybody has conviction about *Asana* practices towards the preservation, maintenance and promotion of health. But the lacuna of anatomical explanation of structures involved and their role in benefit achieved is still persisting.
- Thus, the knowledge of anatomy will help the *asana* practitioners, to avoid injuries.

AIMS AND OBJECTIVES

1. To explore the anatomical structures involved in "*Halasana*."
2. To avoid possibilities of injuries while performing *Halasana* by understanding the anatomical structures involved in "*Halasana*".

MATERIALS AND METHODS

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

Steps for performing *Halasana*:^[11]

1. Lie on your back with your arms beside you, palms downwards.

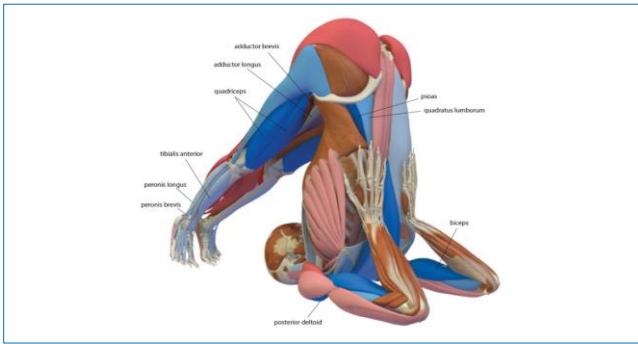
2. As you inhale, use your abdominal muscles to lift your feet off the floor, raising your legs vertically at a 90-degree angle.
3. Continue to breathe normally and support your hips and back with your hands, lift them off the ground.
4. Allow your legs to sweep in a 180-degree angle over your head till your toes touch the floor. Your back should be perpendicular to the floor. This may be difficult initially, but make an attempt for a few seconds.
5. Hold this pose and let your body relax more and more with each steady breath.
6. After about a minute (a few seconds for beginners) of resting in this pose, you may gently bring your legs down on exhalation.

Classification and Level

Basic inverted supine forward bend

Joint Actions^[12]

- Spine cervical flexion;
- Thoracic flexion;
- Scapula adduction, downward rotation, elevation;
- Glenohumeral joint external rotation, extension, adduction;
- Elbow extension;
- Forearm pronation;
- Wrist extension;
- Finger and hand flexion to clasp hands.
- Lumbar flexion;
- Sacroiliac joint nutation;
- Hip flexion, adduction, internal rotation;
- Knee extension;
- Ankle dorsiflexion;
- Toe extension;



Working^[13]

Spine: The intrinsic muscles of the spine (intertransversarii, interspinalis, rotatores, multifidi, spinalis, semispinalis, splenius capitis and cervicis, longissimus, and iliocostalis) are all active in the shoulder stand to keep the legs from falling toward the face. The psoas minor, obliques, rectus abdominis, and transversus are very active in the pose to keep from falling backward, but more active in the intrinsic spinal muscles to keep the spine lengthened.

Working eccentrically in the neck: rectus capitis posterior major and minor, obliquus capitis superior and inferior.

Legs: Gravity, to flex hips; adductor magnus, gracilis, and pectineus, to maintain internal rotation and adduction against the pull of the gluteal muscles; *Vasti*, to extend the knees; tibialis anterior, extensor digitorum, and extensor hallucis, to extend the toes.

Shoulders: The rhomboids work to adduct the scapulae; levator scapulae elevate the scapulae (in this case, to press their upper edges into the floor), and also medially rotate the bottom tips of the scapulae (which angles the glenoid fossa downward toward the hips). The trapezius acts to adduct, elevate, and medially rotate the bottom tips of the scapulae. The pectoralis minor is also active to downwardly rotate the scapulae. (Again, the more adduction of the scapulae, the less the pectoralis minor is active, but working more strongly against the weight of the legs in hip flexion.

Arms: Infraspinatus and teres minor to externally rotate the head of the humerus; subscapularis and coracobrachialis, eccentrically, to protect the front of the shoulder joint from protraction; long head of triceps and teres major to extend the shoulder and

adduct the arm; posterior deltoid, to extend and externally rotate the arm; triceps, to extend the elbow; pronators in forearm; flexor carpi radialis, ulnaris, and flexor digitorum superficialis and profundus, to clasp hands.

Lengthening^[13]

Spine: Spinal extensors through the whole spine.

Legs: Gluteus maximus, hamstrings, gastrocnemius, and soleus.

Shoulders: Serratus anterior, coracobrachialis, pectoralis major, pectoralis minor.



Table 1: Spine Cervical Flexion

Muscle	Location	Nerve Supply
Longus cervicis	Cervical	Dorsal primary rami of C3 to C8
Sternocleido-mastoid	Cervical	Ventral primary rami of C2-C3
Scalene anterior longus	Cervical	Ventral primary rami of C4-C6
Rectus capitis anterior	Cervical	Ventral primary rami of C1-C2
Longus capitis	Cervical	Ventral primary rami of C1-C3
Splenius capitis	Cervical	Dorsal primary rami of C3-C4
Splenius cervicis	Cervical	Dorsal primary rami of C2-C3

Table 2: Thoracic Flexion

Muscle	Location	Nerve Supply
Longissimus Thoracis	Thorax	Dorsal primary divisions of spinal nerves

Iliocostalis Thoracis	Thorax	Dorsal primary divisions of spinal nerves
Spinalis Thoracis	Thorax	Dorsal primary divisions of spinal nerves
Semispinalis Thoracis	Thorax	Dorsal primary divisions of spinal nerves

Table 3: Scapular Movements (Adduction)

Muscle	Location	Nerve Supply
Teres major	Scapular region	Lower scapular nerve (C5, C6)
Teres minor	Scapular region	Axillary nerve (C5, C6)
Subscapularis	Scapular region	Subscapular nerves (C5, C6, C7)
Infraspinatus	Scapular region	Suprascapular nerve (C5, C6)

Table 4: Scapular Movements (Elevation)

Muscle	Location	Nerve Supply
Trapezius	Scapular region	Accessory nerve
Levator scapulae	Scapular region	(C3, C4) and Dorsal scapular nerve (C5)
Rhomboid minor	Scapular region	Dorsal scapular nerve (C5)
Rhomboid major	Scapular region	Dorsal scapular nerve (C5)

Table 5: Scapular Movements (Downward Rotation)

Muscle	Location	Nerve Supply
Latissimus dorsi	Scapular region	Thoracodorsal nerve (C6, C7, C8)
Levator scapulae	Scapular region	(C3, C4) and Dorsal scapular nerve (C5)
Rhomboid minor	Scapular region	Dorsal scapular nerve (C5)
Rhomboid major	Scapular region	Dorsal scapular nerve (C5)

Pectoralis minor	Scapular region	Medial pectoral nerve(C8,T1)
------------------	-----------------	------------------------------

Table 6: Glenohumeral joint (External Rotation, Extension, Adduction)

Muscle	Location	Nerve Supply
Teres Minor	Scapular region	Axillary nerve (C5, C6)
Teres Major	Scapular region	Subscapular nerve (C5, C6, C7)
Pectoralis Major	Scapular region	Medial and lateral pectoral nerve
Infraspinatus	Scapular region	Suprascapular nerve (C5, C6)
Latissimus dorsi	Scapular region	Thoracodorsal nerve (C6, C7, C8)
Posterior deltoid	Scapular region	Axillary nerve (C5, C6)
Coracobrachialis	Arm	Musculocutaneous nerve (C5, C6)
Long head of biceps brachii	Arm	Musculocutaneous nerve (C5, C6)

Table 7: Elbow Extension

Muscle	Location	Nerve Supply
Triceps	Arm	Radial nerve

Table 8: Forearm Pronation

Muscle	Location	Nerve Supply
Pronator Teres	Forearm	Median nerve (C6,C7)
Pronator Quadratus	Forearm	Median nerve (C7,C8)
Brachioradialis	Forearm	Radial nerve (C5,C6)

Table 9: Wrist Extension

Muscle	Location	Nerve Supply
Extensor Carpi Radialis Longus	Forearm	Radial nerve (C5-C8)

Table 10: Finger Flexion

Muscle	Location	Nerve Supply
Flexor digitorum profundus	Forearm	Ulnar nerve (C8-T1)

Table 11: Lumbar Flexion

Muscle	Location	Nerve Supply
Rectus abdominis	Abdomen	Thoracoabdominal nerve (T7-T11)
Internal oblique muscle	Abdomen	Thoracic spinal nerves (T7-T12)
External oblique muscle	Abdomen	Thoracic spinal nerves (T7-T12)

Table 12: Sacroiliac nutation

Muscle	Location	Nerve Supply
Erector spinae	Back	Dorsal rami of spinal nerves
Multifidus	Back	Dorsal rami of spinal nerves

Table 13: Hip flexion, Adduction, Internal rotation

Muscle	Location	Nerve Supply
Rectus femoris	Front of thigh	Femoral nerve
Iliacus	Pelvis	Femoral nerve
Psoas major	Pelvis	Femoral nerve
Sartorius	Front of thigh	Femoral nerve
Pectineus	Front of thigh	Femoral nerve
Adductor brevis	Medial compartment of thigh	Obturator nerve
Adductor longus	Medial compartment of thigh	Obturator nerve

Adductor magnus	Medial and posterior compartment of thigh	Obturator nerve
Gracilis	Medial compartment of thigh	Obturator nerve
Gluteus medius	Gluteal region	Gluteal nerve
Gluteus minimus	Gluteal region	Gluteal nerve
Tensor fasciae latae	Anterolateral aspect of thigh	Gluteal nerve

Table 14: Ankle dorsiflexion & Toe extension

Muscle	Location	Nerve Supply
Tibialis anterior	Lateral side of Tibia	Fibular nerve
Extensor hallucis longus	Anterior compartment of ankle	Fibular nerve

Benefits of Halasana^[14]

- Strengthens and opens up the neck, shoulders, abs and back muscles.
- Calms the nervous system, reduces stress and fatigue.
- Tones the legs and improves leg flexibility.
- Stimulates the thyroid gland and strengthens the immune system.
- Helps women during menopause.

CONCLUSION

In *Halasana*, it gives flexibility to the spine and strengthens the back muscles. It works on almost the entire body muscles starting from the tip of the toes to the cervical. The shoulder is grounded, away from ears and scapula off the floor. Chest and rib cage is broadened, lifted upwards and moving towards the chin. The head and neck are also lengthened. Hips are flexed, lifted and stacked above shoulders. Sit bones are pointed up. Spine is lengthening from shoulders, long, straight, lifted upwards. Back and chest is broad, back lifted upwards, front moving towards head. Legs

are kept together, knee cap pulled upwards. Feet active arch, heels up and toes grounded. Arms away from ears, parallel and grounded. Palms and fingers interlocked and active. Muscles involved core, gluteus, pelvic floor, hip flexors, hamstrings and calves. Navel active and pulled in to lengthen spine. Gaze towards navel or thighs. Breathing to lift hips upwards. It works on the *Manipura* (Solar Plexus) and the *Vishudhi Chakra* (Throat). *Manipura* (Solar Plexus) is the seat of digestive fire and is associated with self-esteem, balance and strength. *Vishudhi Chakra* (Throat) is responsible for communication, self-expression, willpower and choice. Regular practice of this pose stretches the spine and improves digestion, flexibility and tones the spinal nerves. So, we can finally conclude that *Yoga* and anatomy can together help to prevent injuries and provide more benefits.

REFERENCES

- Lasater J. The heart of Pantajali. *Yoga J.* 1997; 137:134–44. [Google Scholar]
- Raub JA. Psychophysiologic effects of hatha yoga on musculoskeletal and cardiopulmonary function: A literature review. *J Altern Complement Med.* 2002; 8:797–812. [PubMed] [Google Scholar]
- Collins C. Yoga: Intuition, preventive medicine, and treatment. *J Obstet Gynecol Neonatal Nurs.* 1998;27:563–8. [PubMed] [Google Scholar]
- Rao M, A Textbook Of Swasthavritta, Chaukhamba Orientalia, Varanasi,2011, Paper 2, Chapter no. 1, page no 386
- <https://www.britannica.com/science/anatomy>
- https://en.wikipedia.org/wiki/Halasanana#Etymology_and_origins
- Swami Prabhavananda, "Patanjali Yoga sutras", published by the Sri Ramakrishna Math, Verse 46, chapter II
- Sivananda Yoga Vedanta Center NYC [Internet]. Plough. [cited 2022 Aug 21]. Available from: <https://sivanandanyc.org/plough/>
- Basavaradd I., editor. 21 June INTERNATIONAL DAY OF YOGA Common Yoga Protocol, Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH). 4 Revised. Ministry of AYUSH | Government of India; 2019. 1–54 p. Available from: http://mea.gov.in/images/attach/Booklet_English_2017.pdf
- Yoga Postures | International Day of Yoga | MEA [Internet]. Ardh Halasana & Halasana. [cited 2022 Aug 21]. Available from: <https://mea.gov.in/yoga-postures-16.htm>
- <https://www.artofliving.org/in-en/yoga/yoga-poses/plough-pose>
- Leslie Kaminoff, Yoga Anatomy, illustrated by Sharon Ellis, Human kinetics, page no. 152
- Leslie Kaminoff, Yoga Anatomy, illustrated by Sharon Ellis, Human kinetics, page no. 153
- <https://www.artofliving.org/in-en/yoga/yoga-poses/plough-pose>

How to cite this article: Rashmi Anil Lakhani, GB Sharma. Anatomical exploration of Halasana. *J Ayurveda Integr Med Sci* 2023;08:173-178. <http://dx.doi.org/10.21760/jaims.8.8.26>

Source of Support: Nil, **Conflict of Interest:** None declared.
