

Critical Anatomical Review of Siddhasana

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Siddhasana, known as the "Accomplished Pose," holds a significant place among classical meditative postures in traditional Yogic systems and is elaborately described in foundational Hatha Yoga scriptures such as the Hatha Yoga Pradipika and Gheranda Samhita. This article presents a critical anatomical exploration of Siddhasana, focusing on its musculoskeletal configuration, neuromuscular coordination, and physiological effects. The pose involves symmetrical flexion at the hips and knees, external rotation of the thighs, and a well-aligned spinal axis, primarily stabilized by the ischial tuberosities. Sustained maintenance of this posture requires coordinated engagement of core muscles namely, the multifidus, transversus abdominis, and pelvic floor musculature which collectively support spinal erectness during prolonged meditation. By integrating classical yogic principles with modern biomechanical insights, this review offers a comprehensive perspective on refining meditative posture and minimizing the risk of strain or injury.

Keywords: Siddhasana, Yoga posture anatomy, meditative Asana, Nadishodhana, Pranayama, Hath Yoga

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Introduction

Siddha means a semidivine being supposed to be of great purity and holiness, and to possess supernatural faculties called *siddhis*. *Siddha* also refers to an enlightened sage, seer, or spiritually accomplished being. The *Siddhas* say that as among *Niyamas*, the most is not to harm anyone and among the *Yamas* a moderate diet, so is *Siddhasana* among the *Asana*.^[1] The name *Siddhasana* comes from the Sanskrit language, where '*Siddha*' refers to someone who is accomplished or perfected, and '*Asana*' means a sitting posture or pose.

According to *Hatha Yoga Pradipika*

The text also describes an alternate form of *Siddhasana*, where one heel is positioned above the genital organ and the second heel rests atop the first. While some refer to this as *Siddhasana*, various teachers recognize it by different names - some call it *Vajrasana*, others *Muktasana*, and a few identify it as *Guptasana*.^[3]

According to modern text of *Yoga*

Swamikuvalayananda^[5], Swamivyasdev,^[6] Direndrabrahmachari^[7] and Swami Vishnudevananda^[8] explain *Siddhasana* in a similar manner. One should take his seat with his legs fully stretched out. He then bends his left leg in the knee joint and folding it upon itself, sets its heel tightly against the perineum. Next, the right leg is folded similarly to the left, placing its heel gently against the pubic region, just above the genitals. Chin is pressed towards the chest to establish *Jalandhara Bandha*. The eyes are directed between the eyebrows securing *Bhrumadhya Drishti*. Except for this bent of the, the spine is to be kept erect. The hands and fingers can be positioned in *Jnana Mudra*, with the thumb and index finger joined while the other fingers remain extended.

In the light of *Yoga* by BKS Iyengar, it's described as follows, sit on the floor, with legs stretched straight in front. Bend the left leg at the knee and place the heel near the perineum and rest the sole of the left foot against the right thigh. Then bend the right leg at the knee and place the right foot over the left ankle, keeping the right heel against the pubic bone. Place the sole of the right foot between the thigh and the calf of the left leg. Extend the arms and gently place the backs of the hands on the knees, with the palms facing upwards.

Join the thumbs and the forefingers and keep the other fingers extended. Maintain this posture for as long as comfortable, ensuring that the back, neck, and head remain upright, with the gaze turned inward as though looking at the tip of the nose.

Aim and Objectives

Aim

To critically analyze the anatomical structure, musculoskeletal involvement, and physiological implications of *Siddhasana*, with reference to classical *Yogic* texts and contemporary anatomical insights, in order to enhance understanding of its therapeutic relevance and meditative stability.

Objectives

1. To explore and evaluate the anatomical components engaged in *Siddhasana* by examining the posture's effects on joints, muscles, nerves, and alignment.
2. To correlate these findings with traditional *Yogic* literature and modern anatomical science; and to assess its suitability for *Pranayama*, meditation.

Materials and Methods

Materials - *Ayurvedic* classical texts, internet, journals.

Methods - Literary Review

Importance of *Siddhasana*

Siddhasana is regarded as one of the most superior *Yogic* postures. While the *Gheranda Samhita* does not place strong emphasis on its significance, both the *Hatha Yoga Pradipika* and the *Shiva Samhita* highlight its importance. The *Hatha Yoga Pradipika* states that there is no posture comparable to *Siddhasana*, no breath control like *Kevala Kumbhaka*, no *Mudra* equal to *Khechari*, and no absorption like that attained through *Nada*.^[10] This clearly underscores *Siddhasana*'s esteemed position among *Yogic* practices.

The text further explains that just as *Mitahara* (moderation in diet) is central among the *Yamas*, and *Ahimsa* (non-violence) among the *Niyamas*, enlightened *Yogis* recognize *Siddhasana* as the foremost among all *Asanas*.^[11] It is said that this posture holds such high value that it should be prioritized over all other eighty-four classical *Asanas*,

As it purifies the seventy-two thousand *Nadis* (energy channels), a prerequisite for effective *Pranayama*.^[12]

A Yogi who meditates on the Self and practices *Mitahara* can attain *Yogic* perfection by consistently practicing *Siddhasana* for twelve years. Mastery of this *Asana*, along with the ability to regulate breath through *Kevala Kumbhaka*, makes the use of other *Asanas* unnecessary.^[13]

According to B.K.S. Iyengar,^[14] *Siddhasana* supports the health of the pelvic region and is among the most calming and stabilizing postures. It sharpens mental focus and is highly recommended for both *pranayama* and meditation. Additionally, it aids in relieving stiffness in the knees and ankles.

The posture enhances blood flow to the lower back and abdominal region, thereby strengthening the lumbar spine and nourishing the abdominal organs.

Procedure and Technique of Siddhasana

As per the *Hatha Yoga Pradipika*, *Siddhasana* is performed by pressing the heel firmly against the perineum, while the other foot is placed above the genital region. The chin is kept fixed against the chest, the body remains steady and composed, and the senses are controlled. The eyes are fixed with steady focus at the point between the eyebrows.^[2]

According to Gherand Samhita

The yogi who has mastered self-control should position one heel against the perineum and place the other heel at the base of the genital area. The chin is then gently pressed to the chest, maintaining a calm and upright posture. With the body still, focus is directed to the space between the eyebrows. This posture, known as *Siddhasana*, is said to lead one toward liberation (*Moksha*).^[4]

1. Sit comfortably on the floor by keeping the legs close to each other.
2. From a seated position, bring one heel to press gently against the perineum, with the sole of the foot resting flat against the inner thigh. The knees should be grounded and stable.
3. Next, place the opposite ankle over the first, aligning the ankle bones so the heels are positioned one above the other. The upper heel should gently press against the pubic area, allowing the genitals to settle comfortably between the two heels.

4. Tuck the outer edge and toes of the top foot into the space between the opposite calf and thigh. Similarly, draw the toes of the bottom foot upward into the corresponding space on the other side. Keep the spine upright and aligned throughout the posture.

5. Press the chin against the chest.

6. Keep focusing in the space between the eyebrows.

7. Place the hands on the knees, or you can make *Jnana*

Anatomy

Parts involved

Arms^[15] - arms relax with the palms of the hands facing up (supinated). Posterior deltoid initiates external shoulder rotation, while anterior deltoid is slightly stretching.

Neck^[16] - to stabilize cervical spine in a natural curve cervical extensor muscle – splenius capitis and cervicis - engage while in a neutral or slightly lengthening position. Activate this by imagining head is as light as a helium balloon.

Torso^[17] - Spinal extensors and transversus abdominis engage to lengthen and stabilize spine into neutral while rectus abdominis stretches slightly. Multifidus engages, sending feedback to brain about body's position.

Rhomboids and middle and lower trapezius engage slightly to retract scapulae, while consciously release any tension held in upper trapezius. latissimus dorsi and other back muscles may be minimally engaged to stabilize in position.

Thighs and lower legs - hip flexors - mainly iliopsoas help maintain hip flexion. You may feel engagement of more thigh muscles here; quadriceps, gluteus maximus, and hip adductors are stretched. may feel stretching around ankles, which are in plantar flexion. This pose helps the spine maintain its natural curves by encouraging proper alignment of the intervertebral discs.

Disc stacking^[18] - When spine is in its natural curvature-in a "neutral" position - vertebrae are stacked and the gravitational load on intervertebral discs is evenly distributed. discs are made of squishy fibrocartilage, allowing spine to move dynamically.

Locked long rhomboids - If you slouch, back muscles, including rhomboids, may be "locked long". When this happens, shoulder blades spread forwards and pectoralis minor muscles shorten. Try rolling shoulders back to awaken rhomboids. This forms a muscular support system that promotes efficient posture.

Elongating spine - "Axial extension" involves muscle engagement to elongate the axial skeleton (spine, ribcage, and skull). In various Asanas, this engagement works against gravity and reduces the tendency to collapse forward. Still, avoid overstretching to the point of diminishing the spine's natural curves, which - like a spring - offer essential support and elasticity.

Most Stretched Structures in *Siddhasana*

- Gastrocnemius
- Soleus
- Tibialis anterior
- Extensor Hallucis longus
- Extensor Digitorum longus

Benefits Of *Siddhasana*

- This seated *Yoga* posture activates the root *Chakra* (*Muladhara*), helping to awaken the dormant *Kundalini*
- This posture is thought to activate the body's sexual vitality.
- It also supports the health of the reproductive organs and benefits the gynecological system.
- Known for promoting mental clarity, this pose is commonly practiced during meditation to aid concentration.
- *Siddhasana* positively influences the nervous system and contributes to the regulation of blood pressure.

Muscles And Ligaments Involved in *Siddhasana*[19]

Ankle and Foot Region

The foot is inverted and the ankle is plantar flexed in *Siddhasana*. Plantar flexion is produced by the gastrocnemius and soleus muscles, with assistance from the flexor hallucis longus, flexor digitorum longus, plantaris, and tibialis posterior. When the ankle is plantar flexed, the extensor muscles of the leg's anterior compartment are stretched.

This comprises the tibialis anterior, peroneus tertius, extensor digitorum longus, and extensor hallucis longus. When the foot is inverted, the evtor muscles in the lateral part of the leg are stretched. When the foot is turned inward (inverted), it stretches the evtor muscles found in the leg's lateral compartment, particularly the peroneus longus and peroneus brevis. Placing the heel close to the perineum also stretches the muscles of the dorsum of the foot. Dorsum of foot contains extensor digitorum brevis and extensor hallucis brevis.

Table 1: Muscles stretched in ankle and foot region in *Siddhasana*.

Muscle	Location	Nerve supply
Tibialis anterior	Anterior compartment of leg	Deep peroneal nerve (L4-S1)
Extensor digitorum longus	Anterior compartment of leg	Deep peroneal nerve (L4-S1)
Extensor hallucis longus	Anterior compartment of leg	Deep peroneal nerve (L4-S1)
Peroneus tertius	Anterior compartment of leg	Deep peroneal nerve (L4-S1)
Peroneus longus	Lateral Compartment of leg	Superficial peroneal nerve (L5,S1, S2)
Peroneus brevis	Lateral Compartment of leg	Superficial peroneal nerve (L5,S1,S2).
Extensor digitorum brevis	Dorsum of foot	Terminal branches of the deep peroneal nerve (S1-S2)
Extensor hallucis brevis	Dorsum of foot	Terminal branches of the deep peroneal nerve (S1-S2)

The muscles are not actively contracting to hold the ankle and foot in place since they are set in place.

Ligament of ankle joint

Inversion of the foot places a stretch on the lateral collateral ligaments of the ankle joint. These include

1. The ligaments of the anterior talofibular region (ATFL)
2. The ligaments of the posterior talofibular region (PTFL)
3. Ligament of the calcaneofibular

Knee Joint Region

When the knee joint is flexed and the leg is laterally rotated, the primary muscles responsible for flexion are the semimembranosus, semitendinosus, and biceps femoris, with assistance from the gracilis, popliteus, and sartorius.

The biceps femoris primarily facilitates lateral rotation of the leg. When the knee is flexed, the muscles in the front (extensor) compartment of the thigh undergo stretching. This compartment contains the quadriceps femoris group, which includes the rectus femoris, vastus lateralis, vastus medialis, and vastus intermedius. The sartorius muscle is not stretched because it acts as a flexor of both the hip and knee joints. Innervation to these muscles is provided by the femoral nerve (L2–L4).

The semitendinosus and semimembranosus, part of the hamstring group located in the posterior compartment of the thigh, function as medial rotators of the knee and are stretched during lateral rotation of the leg. The muscles are not actively contracting to hold the knee joint in place since it is set in place.

Ligaments of Knee Joint

When the leg rotates outward and the knee bends, significant stress is placed on two key ligaments: the lateral collateral ligament (LCL) and the fibular collateral ligament. Both knee flexion and external rotation can contribute to injury of the LCL. Lateral rotation also puts strain on the anterior cruciate ligament (ACL), causing it to stretch over the posterior cruciate ligament (PCL). Flexion combined with either internal or external rotation increases the likelihood of ACL tears. Of the two menisci, the medial one is more susceptible to injury. One of the most common causes of a meniscus tear is rotation of the knee while it is fully flexed.

Pelvic and Hip Region

Hip flexion combined with abduction and external rotation results in a stretch of the medial (adductor) thigh muscles. This group of muscles is particularly stretched during hip abduction, as it normally functions to resist flexion and external rotation as well. The adductor compartment includes the gracilis, adductor longus, the obturator nerve, derived from spinal levels L2 to L4, is the primary source of innervation for the adductor magnus and adductor brevis muscles. Among them, the adductor magnus is a hybrid muscle as it also receives innervation from the sciatic nerve (L4). The pectineus is the most proximal muscle in the adductor group. It contributes to hip adduction and internal rotation, which causes it to be stretched in this position. This specific muscle, unlike the others, is innervated by the femoral nerve.

In *Siddhasana*, the knee and ankle joints are held in a fixed position by the posture itself, reducing the need for active muscle contraction around these joints to maintain the pose. This particular muscle receives the femoral nerve supply.

However, at the level of the hip joint and pelvis, there is active muscular engagement to maintain the pose. Specifically, the hip flexors, abductors, and external rotators are actively contracting to stabilize and support the posture.

The tensor fascia lata is a muscle located in the gluteal region that assists in knee extension and lateral rotation of the leg. It receives innervation from the superior gluteal nerve. The gluteus medius and gluteus minimus act as primary hip abductors and also assist in medial rotation of the thigh.

These muscles are also supplied by the superior gluteal nerve (L4–L5, S1). The group of six small lateral rotators of the hip includes the piriformis, gemellus superior, gemellus inferior, obturator externus, obturator internus, and quadratus femoris. These muscles not only perform lateral rotation but also assist in abduction of the flexed thigh. The psoas major, along with the iliacus, plays a key role in hip flexion and external rotation.

Hip Joint Ligaments

In a position where the hips are flexed, abducted, and externally rotated, certain ligaments of the hip joint - which are among the strongest in the body - are put under stretch. These ligaments collectively prevent the hip from abducting beyond its normal range. In this posture, the ischiofemoral ligament and the pubofemoral ligament are the ones that are most stretched.

Thoracic and Lumbar Spine

In this posture, the thoracic and lumbar regions of the spine remain upright. To maintain this erect alignment, the erector spinae muscles contract to extend the spine, while the psoas major and minor activate to draw the anterior lumbar spine forward, helping to reestablish the natural lumbar curvature. The erector spinae represent the largest muscle group in the back, creating a noticeable bulge along both sides of the vertebral column. It functions as the primary extensor of the spine. This muscle group is divided into three main parts:

- **Iliocostalis** (lateral)

- **Longissimus** (intermediate)
- **Spinalis** (medial)

Each of these components is made up of a series of overlapping muscle segments that contribute to spinal extension and stability. To maintain a straight spine, the lumbar and thoracic group of erector spinae muscles contract. It raises the lumbar lordosis and flattens the thoracic kyphosis. The lumbar and thoracic spinal nerves supply these muscles. The quadratus lumborum supports lumbar lordosis and works in tandem with the erector spinae.

Discussion

The basic joint positions in *Siddhasana* are plantar flexed ankles, inverted feet, flexed knees, laterally rotated leg, flexed, abducted and externally rotated hips, erect lumbar and thoracic spine, flexed cervical spine, flexed and externally rotated shoulders, extended elbows and forearm supinated. *Siddhasana* is considered the foundational posture for practicing *Pranayama*, *Mudra*, and *Bandha*, and is therefore closely linked to the purification of the *Nadis*. In it the blood circulates in the lumbar region and the abdomen, and these tones the lower region of the spine and the abdominal organs. Concentration is achieved by this *Asana*. Pressure on the perineum stimulates *Mooladhara Chakra*, the point at which the three major *Nadi* originate, and while the posture is being maintained, electrical and *Pranic* impulses are constantly flowing up to the brain, purifying the *Nadi* and removing all blockages.

Conclusion

Siddhasana, often referred to as the "Accomplished Pose," is not only a foundational meditative posture in classical *Yoga* texts but also a position of significant anatomical importance. From an anatomical perspective, *Siddhasana* promotes proper alignment of the spine by encouraging the stacking of intervertebral discs and maintaining the natural spinal curves, which supports both stability and energy flow. The fixed position of the hips, knees, and ankles minimizes muscular effort, allowing for prolonged sitting with reduced fatigue. The posture facilitates optimal diaphragmatic breathing and supports the engagement of pelvic floor muscles, which is essential for practices like *Pranayama*, *Mudra*, and *Bandha*.

Furthermore, by stimulating the root chakra and promoting stillness, it assists in the purification of the *Nadis* and enhances meditative concentration. A critical understanding of the musculoskeletal and neural involvement in *Siddhasana* can help practitioners avoid strain and achieve deeper levels of physical, energetic, and mental balance.

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