Anatomical Exploration of Vrikshasana

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ABSTRACT

Yoga is derived from the Sanskrit term 'Yuj' meaning to bind, join, attach and yoke, to direct and concentrate one's attention on, to use and apply. It also means union or communion. It is the true union of our will with the will of God. Yoga is performed ugh 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. "Vrikshasana" was described as one of the 32 most important Asana in GherandaSamhita. Vrikshasana word comes from Sanskrit words "Vriksha" means tree and Asana means posture. It is a balancing Asana. The pose is called Vrikshasana because in this pose it gives true spirit of tree. In this article anatomical structures involved in the "Vrikshasana" and how this involvement is beneficial in maintaining the health or in management of any disease is explained.

KEYWORDS: Anatomy, Asana, Joint, Vrikshasana, Muscle, Yoga

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INTRODUCTION

"Vrikshasana" was defined as one of the 32 most important Asana in GherandaSamhita (dated around 1650 CE). The Gheranda Samhita is the most encyclopaedic of the threeclassic 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

The name *Vrikshasana* arises from the *Sanskrit* words *Vriksha* means tree and *Asana* means posture. It is a balancing *Asana*. The pose is called *Vrikshasana* because in this pose it gives true spirit of tree.²

Need of Study

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.

The knowledge of anatomy will also help the *Asana* practitioners, to avoid injuries.

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 health or in management of any disease.

Develop Aim and Objectives -

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

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-

According to Gheranda Samhita

Stand straight on left leg, bend the right leg and then place the right foot on the root of the left thigh. Standing thus like a tree on the ground, is called the tree posture.³

According to *Swami Vyas Dev ji*, sit on your feet on a soft blanket or a cushion, keeping the palm on the ground about two feet apart. Bend the legs at the knees and raise the hips a little. Place your head between the palms and raise the legs straight. Stretch the whole body like a staff. Balance the body on your hands and head. Retain this posture for some time.⁴

According to *Dhirendra Brahmachari*, stand on the ground and place the hands before the feet at a distance of about a foot. Then keeping the body as straight as possible. The whole weight should rest on the palms and the toes. The

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back and the feet should slowly lift so that the weight is borne only on the hands. The legs should then be gradually straightened so that from the feet above to the palms below the whole body is in a straight line like a tree.⁵

Steps for Performing "Vrikshasana"

- Stand straight and place your arms to the side of your body.
- Bend your right knee slightly and then keep the right foot high up on the left thigh, just make sure that you keep the sole steady and flat on the thigh root.
- Left leg must be placed straight and one you have taken this stance breathe and balance.
- Now simply breathe in and slowly raise your arms above the head and bring them in namaste mudra.

- Look straight at sane far off object and hold it. This will allow you to maintain a good balance.
- Keep your back straight and notice that your body is steady.
- Deep breathe as you inhale and relax your body as you exhale.
- Slowly bring your hands down and release the right leg. Get back to the initial position.

Contraindications-

Those who suffers from-

- Arthritis patients
- Vertigo patients
- Obese people
- Knee problem
- Hip injury



Anatomical Exploration of *Vrikshasana*-Muscles and ligaments involved in *Vrikshasana*. Joint actions

- Spine is neutral.
- Standing leg- Hip is extended, internally rotated and adducted. Knee is extended.

Ankle is planter flexed.

 Lifted leg- Hip is flexed, externally rotated and abducted. Knees are flexed.
Ankle is dorsiflexed.

The spine

Spine is in neutral position during this posture. Neutral spine is the natural position of the spine when all three curves of the spine- cervical, thoracic and lumbar are present and in good alignment. The erector spinae are the largest muscle mass of the back, forming a prominent bulge on either side of the vertebral column. It is the chief extensor of the vertebral column. It consists of three groups: iliocostalis (laterally placed), longissimus (intermediately placed), and spinalis (medially placed). These groups in turn consist of a series of overlapping muscles. The lumbar and thoracic group of erector spinae muscles are contracted to keep the spine straight.

Standing leg-

Hip joint

Hip joint is extended, internally rotated and adducted. Hip extensors are the gluteus maximus and hamstrings. Gluteus Maximus is a primary muscle of the hip extension. The other hip extensors are long head of biceps femoris, semimembranosus, semitendinosus and posterior adductor magnus. So, the flexor of the hip joint will get stretch. The flexors of hip joint are Sartorius, vastus lateralis, vastus medialis and vastus intermedius. Adduction is performed by the adductors of the hip joint which are three groups of adductors, pectineus and gracilis.

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Knee joint

Knee joint is extended. Muscles which works on knee extension are quadriceps femoris (four heads-vastus lateralis, vastus medialis, vastus intermedialis and biceps femoris). And it is assisted by tensor fasciae latae and articularis genu. The Flexor compartment or posterior compartment of thigh is stretched when the knee is extended. This comprises of the hamstring muscles which crosses the knee and hip joints. This hamstring group of muscles comprises of Semitendinosus, semimembranosus and biceps femoris. To sustain the extended position of the knees the extensors of knee are in active contraction. The quadriceps femoris muscle as a whole keep the knees extended. These include rectus femoris, vastus medialis, intermedialis and lateralis.

Ligaments of knee joint

Knee joint is extended. In this position the maximum pressure is on the following ligaments.

- Anterior and Posterior cruciate ligament (ACL and PCL)
- Medial and Lateral collateral ligament (MCL and LCL)

Ankle joint

Ankle joint is plantar flexed. The primary muscles in plantar flexion are gastrocnemius and soleus. Extensor digitorum longus, extensor hallucis longus, tibialis anterior and peroneus tertius belongs to anterior compartment of leg. While extensor digitorum brevis and extensor hallucis brevis belongs to the dorsum of foot. Tension in the tibialis anterior, extensor hallucis longus, and extensor digitorum longus muscles is the primary limit to plantarflexion.

Lifted leg-Hip joint

The hip is flexed, abducted and externally rotated. Flexion of the hip joint done by psoas major, iliacus, pectineus, rectus femoris, sartorius. Abduction is done mainly by gluteus medius and minimus and assisted by the tensor fascia latae and sartorius. External rotation of hip joint is functioned by the obturator externus and internus, gemellus superior and inferior and quadratus femoris. It is assisted by piriformis, gluteus maximus and sartorius.

Knee region

Knee joint is flexed. The flexion of the knee joint is mainly done by semimembranosus, semitendinosus and biceps femoris and it is assisted by the gracilis, popliteus and sartorius. The extensor compartment or anterior compartment of the thigh will get stretched in *Vrikshasana*. This compartment consists of quadriceps femoris which includes rectus femoris, vastus lateralis, medialis and intermedius.

Ligaments of knee joint

Knee joint is flexed. In this position the maximum pressure is on the following ligaments.

- Medial and lateral meniscus.
- Posterior cruciate ligament.

Ankle joint is dorsiflexed. Dorsiflexion of the ankle is done principally by the tibialis anterior. It is assisted by the extensor digitorum longus, extensor hallucis longus and peroneus tertius.

Benefits-

It is very advantageous for head, neck, chest, heart and eyes. The blood circulates towards the head and therefore these parts especially acquire nourishment. Improves digestion and helps in continence. The hair does not grey prematurely.⁶

The *Asana* is very good for the eyes as well as for the upper respiratory tract. Patients of asthma are advised to practice this *Asana*. Patients of high blood pressure and heart diseases are cautioned against the practice of this *Asana*. The practice of this *Asana* cures dermatological disorders as well.⁷

Discussion-In *Vrikshasana* the basic joint positions are Spine is neutral, hip is flexed, externally rotated and abducted. knees are flexed. ankle is dorsiflexed. In this pose our entire body is placed on to one leg thus *Vrikshasana* improves the balance and stability of the body. It strengthens the ligaments and tendons of the feet. It strengthens the bones and muscles of the hips, legs, arms and shoulders because the weight bearing nature of this *Asana*. This is the best pose for posture related complaints. This *Asana* is helpful to cure sciatica and back pain.

Conclusion

Vrikshasana basically is a balancing *Asana*, because this *Asana* is performing with the one leg placed on the ground. This *Asana* provides strength and stability to the feet. It increases the concentration power of mind. It is very beneficial for head, neck, chest, heart and eyes. In this *Asana* blood circulates towards the head and consequently these parts specifically attain nourishment. It improves digestion and helps in continence.

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Ankle joint