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Anatomical Exploration & Applied Aspects of Bhujangasana

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Abstract: ***The word 'Yoga' is derived from Sanskrit root 'Yuj' which means 'to join' or 'to yok'. The union of individual self Jivatma, with the universal self Paramatma is Yoga. Yoga is performed through some specific postures called Asanas. The benefits of Asanas range from physical to spiritual level. Asanas not only tone the muscles, ligaments, joints and nerves but also maintains the smooth functioning and health of entire body. Bhujangasana was described as one of the 32 most important asana in Gheranda Samhita. In Bhujangasana, the cobra pose, we fully embody humility as we lay ourselves down on the earth, and reaffirm our kinship with all beings, including those that crawl directly on the ground. yet as we lift ourselves up in a beautiful arc that opens the heart and raises our sight, we embrace that divine yearning in all humans toward a higher reality. In this article the essential quest of Bhujangasana practitioner about the anatomical structures involved in the Bhujangasana and how this involvement is benefecial in maintaining health or in management of any disease is explained.***
Keywords: Anatomy, Asana, Bhujangasana, Joint, Muscle, Yoga

I. INTRODUCTION

Ayurveda is the worlds oldest indian holistic health care system .The basis aim of Ayurveda is to maintain health of the healthy and to free every person of the world disease. Ayurveda see every illness and every form of health as influencing both body and mind. Ayurveda explains health as a balanced state of Dosa ,Agni, Dhatu and Mala. The state of mental well being holds great importance in the definition of health in Ayurveda. The association between body and mind is very important in Yoga also.

The science of Yoga does not dictate where the body ends and the mind begins but approaches both as a single ,integrated entity. The key is to integrate the two together practicing Yoga has the holistic impact of relaxing the body and calming the mind.

Bhujangasana was described as one of the 32 most important Asana in Gheranda Samhita (dated arround 1650 CE).The Gheranda samhita is the most encyclopedic 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.

Bhujanga translates as serpent, and as we practise the pose we can feel the whole body from tips of the toes to the crown of the head like a cobra rising up in a graceful arc reaching towards the sky. In some yogic teachings, acoiled snake is used as a symbol for the Kundalini energy lying dormant at the base of a spine When this potential power is stimulated it moves upwarad awakening the Chakras and uplifting consciousness.

II. NEED OF STUDY

This article willl be fulfilling the essencial quest of Asana practitioner about the anatomical structure involved in Bhujangasana and how this involvement is beneficial in maintaining health or in management of any disease.

III. AIM AND OBJECTIVES

A. To explore the anatomical structure involved in *Bhujanagasana*.
B. To explore the benefits of correct posture during performing *Bhujangasana.*
C. To develop scientific explanation of *Bhujangasana* on the basis of anatomy.

IV. HOW TO PERFORM *BHUJANGASANA*

A. अन्गुष्ठ नाभिपर्यन्तमधोभूमौ विनिन्यसेत्!
B. करतलाभ्याम् धराम् ध्रत्वा ऊर्ध्वशीर्षः फणीव हि!! (घे. स. २/४१)

According to *Gherand Samhita* "Let the body from navel to toes, touch the ground,the palms placed upon the ground and raised gently the upper part of the body (form navel to head) like a snake.

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Following steps should be followed for this *Asana*

1) Start in a prone position with the legs straight and the inner thighs Knees and ankles touching hand should be palms down and directly under the shoulder.
2) Inhale to lift the upper body off ground, working towards straightening the arms.
3) Allows the crown of the head to move upwards, then exhale.
4) Release the pubis to the ground inhale to lengthen the spine while allowing the chest to move forwards.

There are three muscle groups that are involved in the Bhujanagasana i.e. Neck muscles, shoulder muscles and the back muscles. The deep back muscles act as the prime movers include spine extensors namely Intertransversarii, Interspinalis, Spinalis.These muscles work concentrically and create the spine extension .In addition to these the serratus posterior superior muscle synergizes the action of erector muscle, which assist in the chest expansion.

The rectus abdominis and oblique muscle limit the over mobilization of lumbar spine. The prime mover of the hip extension is hamstring muscle group mainly semitendinosus and semimembranosus along with the gluteus maximus muscle. Other movements are internal rotation and adduction of hip joint, knee extension, Ankle planter flexion, Glenohumeral joint external rotation, elbow extension and forearm pronation. The muscles which limits the backward bending in the hip include quadriceps femoris, psoas, Iliacus and abdominal muscles.

Image: Bhujangasana posture





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A. Contraindications

1) Persons with spondylolithesis or spondylolysis should avoid this *Asana*.
2) Persons with recent abdominal surgery need to use common sense and consult a medical practitioner.
3) Care needs to be taken with spinal injuries and weak back muscles.

V. BENEFITS OF *BHUJANGASANA*

A. देहाग्निवर्धे नित्यम् सर्वरोगविनाशनम्!

B. जागर्ति भुजगी देवी भुजन्गासनसाधनात्!! (घे. स. २/४२)

Bhujangasana is great for increasing mobility in the spine ,it also helps strengthen the muscles in the hamstrings ,triceps ,gluteus, and calves. Another benefits is the stimulation of the digestive organs due to the slight pressure applied to the abdomen. Bhujangasana is very helpful in counteracting any habitual distorting of the normal spinal curves.The muscles along the spine are strengthened helping to support the spinal column.

VI. SCIENTIFIC EXPLANATION OF BENEFITS

The benefits of the "Bhujanagasana" developing the flexibility and strength of the entire vertebral column and increasing the tone of the buttocks and legs. This results in an enhanced circulation which finally has tremendous positive influence on the general systems of the body. The Bhujanagasana has a profound effect on the rise of " feeling of upliftment and elation". Bhujanagasana has the capacity to act as a natural antidepressant because it promotes and increase in energy level, resulting in chasing away fatigue, Depression and sadness. Bhujanagasana increases the gastric fire,thus annihilating many diseases and process as whole leads to the "Awakening of the Kundalini". A proper anatomical insight into the correct practice of the Bhujanagasana provides reliable and durable benefits to even the deep abdominal musculature too. The Bhujanagasana actually the back bending posture which is said to be one of the most energetic and exhilarating member of the Yogasana group.Many individuals have the anatomy of the upper back as rounded and the chest area closed. This is attributed to the present day lifestyle jobs and work culture. Poor postural positions result in restricting the front of the body and exaggerating the effects by means of shallow breathing, ultimately this has a negative impact on the general well being of the person Thus, Bhujanagasana allows and favours the thorasic cage to expand, besides enhancing flexibility of the vertebral column. All these practices also help in developing the strength of lower back as well. This is a great Asana for people who tend to slouch.

VII.DISCUSSION

A. Joint Actions In Bhujangasana

1) Spine extension
2) Hip extension, internal rotation, adduction
3) Knee extension
4) Ankle planterflexion
5) Shoulder Joint external rotation
6) Elbow extension and fore arm pronation.

B. Muscles Involved In Bhujangasana

1) *The Spine:* Spinal extensor group- Intertransversarii, Interspinalis and Spinalis works concentrically to create extension.
2) *Hip Region:* In Bhujangasana the hip is extended. The hamstrings specially semitendinosus and semimembranosus extend the hips and maintain adduction and internal rotation. The extensor portion of the adductor Magnus along with the gluteus Maximus also extend the hips.
3) *Knee Joint:* Knee is extended in Bhujangasana. The vastus lateralis, vastus medialis, vastus intermedialis work to extend the knees.
4) *Ankle Joint:* In Bhujangasana ankle joint is planterflexed. Extensor digitorum longus, extensor hallucis longus, tibialis anterior and peroneus tertius belongs to anterior compartment of leg while extensor hallucis brevis belongs to the dorsum of foot.
5) *Shoulder Joint:* Shoulders externally rotated in Bhujangasana. The upper limb is kept straight. The scapula is almost at neutral position. The serratus anterior is active to maintain a neutral position of the scapula against the push of the arms.
6) *Elbow Region:* In Bhujangasana the upper limb is kept straight and the elbow is extended. The fore arm is in pronated position. To maintain the extension of elbow triceps is actively contracted

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VIII. CONCLUSION

From all the above description about Bhujangasana it is clear that Bhujangasana is very useful Asana for nowadays lifestyle. Bhujangasana affords a variety of physical benefits, including improved muscular strength, flexibility, relaxation and posture. It tones the organ that lie in the lower abdomen. It stimulates the digestive ,reproductive and urinary system.It helps regulate metabolism thus balancing the weight. It makes the buttocks firm. It works as a great stress releaser.The main objective of Bhujangasana is to create a perfect balance of the interacting activities and process of the physical body, the mind and energy of the body. The aim of this Asana is not merely the superfecial development of muscles. It tends to normalize the functions of the entire organism ,to regulate the involuntary process of respiration ,circulation, digesion, elimination, metabolism etc. and to affect the working of all the glands and organs as well as the nervous system and the mind.

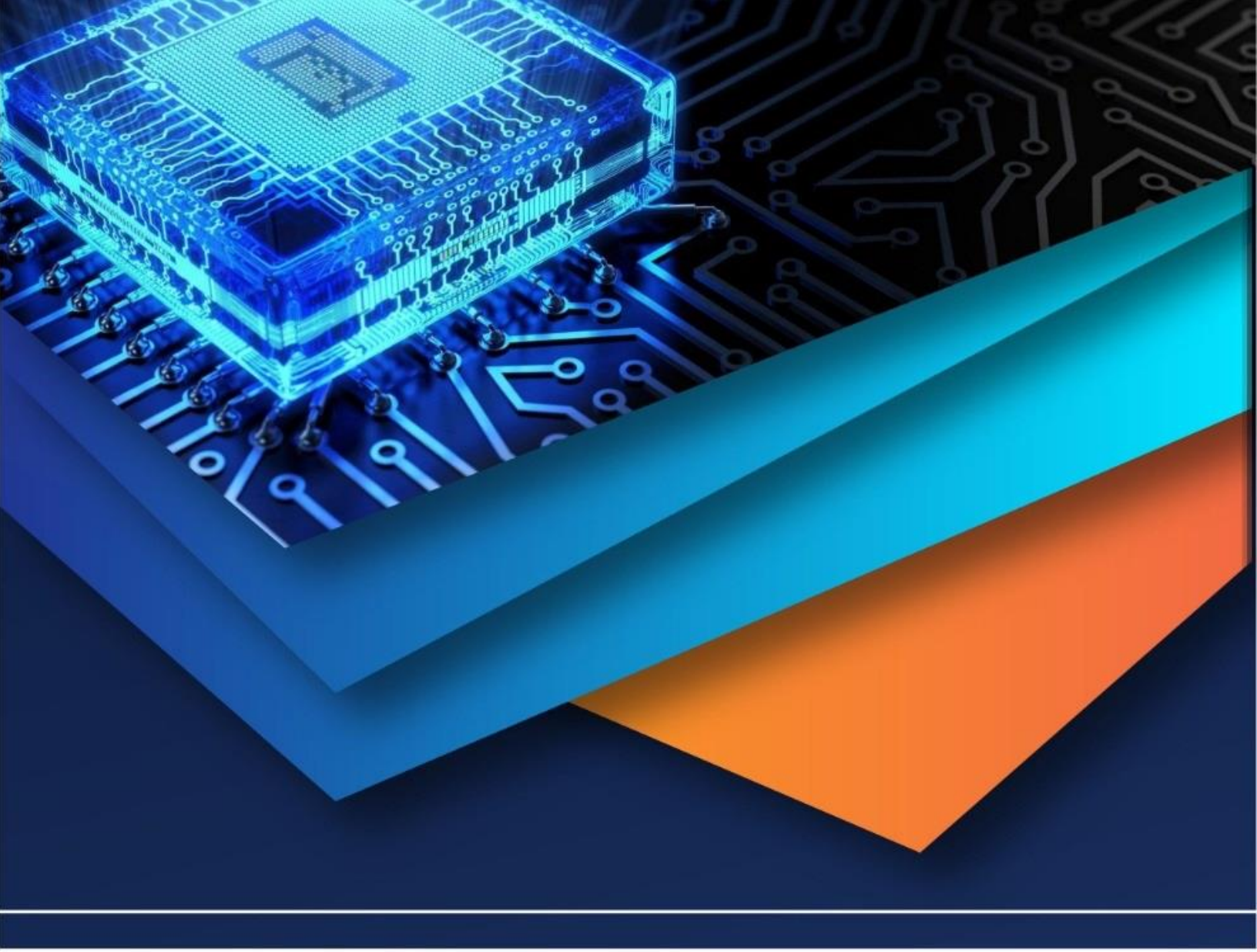
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