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Perspective of *Yoga* as an Anatomical Point of View

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Abstract

The key details of anatomy are most valuable for the persons who practice *Yoga* because it is based on the structure and function of the human body and its relationship with breath and spine. The main challenge understands the movements in theory and applying them practically is must and should. An emphasis is given on the musculoskeletal and respiratory system. In the concept of *Yoga* one has to understand the specificity of *Prana* and *Apana* which describes the essential activities of life. There are four main paths of *Yoga* by which its whole concept can be estimated. While practicing *Yoga* most involved region of the body is Core region, this includes Lumbopelvic-hip complex. The stability of this will be attained by proper practice of *Yoga* under Core Stability. The core stability develops by reciprocal inhibition of Agonist – Antagonist muscle group in each of three planes of movement. The systemic way of practice of *Yoga* by knowing the functional Anatomy enhance the performance, power of body, mind, soul and fewer the injuries, where it's improper practice will ends up in impairment of health.

Keywords

Apana, Core Stability, Lumbo- Pelvic Hip complex, Prana, Yoga

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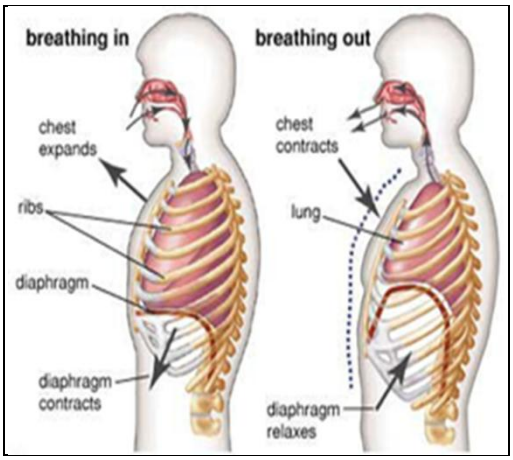
INTRODUCTION

The key details of anatomy are most valuable for the persons who practice *Yoga*. The view of *Yoga* is based on the structure and function of the human body. *Yoga* practice emphasizes the relationship of the breath and the spine. By viewing all the other body structures in light of their relationship to the breath and spine, *Yoga* becomes the integrating principle for the study of anatomy[1]. Additionally, for *Yoga* practitioners, anatomical awareness is a powerful tool for keeping our bodies safe and our minds grounded in reality. The deepest principles of *Yoga* are based on a subtle and profound appreciation with construction of human system. The subject of the study of *Yoga* is the Self, and the Self is dwelling in a physical body[2].

Yoga is practice of connecting movement to breathe. Movement is considered as locomotion of the body in which major contribution is given by musculoskeletal system which comprises of muscles, bones and joints. The main challenge understands the movements in theory and applying them practically is must and should. For the benefit, a traditional treatment to do *Yoga* postures using anatomically precise terminology, and for correlations with medical science, an emphasis is given on the musculoskeletal and respiratory system because all actions are expressed by musculoskeletal system and breathing is of paramount importance in *Yoga.*

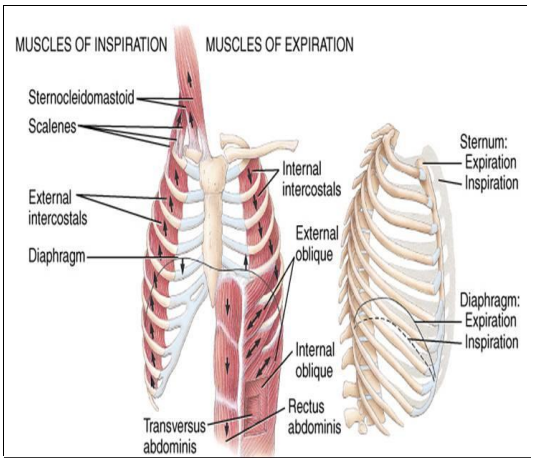
Interdependence of *Yoga* on Anatomy

Without considering the knowledge of Anatomy, practicing *Yoga* becomes more difficult like a blind person visualizes the things. Without the knowledge of body movements, one should not practice or implement *Yoga*. An advantage of approaching *Yoga* scientifically is that we can often identify elements of practice that produce a benefit and then we concur our knowledge of science to amplify the effect[3]. Beyond uncovering the misconceptions that have spent into our modern understanding of *Yoga*, a deeper look reveals the profound wisdom of our ancient tradition. Once the anatomy of bronchial tree is clearly grasped it becomes clear that it is impossible to fill the lungs from the bottom to top & that the top to bottom method is simply linking the shape and change of breathing to the direction of airflow into the body[4].



This orientation to the breath also links the flow of respiratory movements and spinal support with the deeper concepts of *Prana* and *Apana*[5].

While practicing *Yoga*, the pattern of breathing and the anatomical and physiological changes which take place in the body are to be known. At the time of inspiration, the external intercostals muscles contract moving the rib cage up and out, the diaphragm moves down at the same time, creating negative pressure within the thorax. The lungs are held to the thoracic wall by the pleural membranes and so expands outwards as well, which creates negative pressure within the lungs, so air rushes in through the upper and lower airways, in the mean while expiration is mainly due to the natural elasticity of the lungs, which tend to collapse if they are not held against the thoracic wall[6].



Review of *Ayurveda*

The approach to the practice of *Yoga* is holistic a part from its scientifically congruent factors. In the concept of *Yoga* one has to understand the specificity of *Prana* and *Apana* [7] which describes the essential activities of life.

The word meaning of *Prana*[8] denotes "to live" and "breathe", but in this context *Prana* is not being capitalized, because it refers to the functional life processes of a single entity. The capitalized *Prana* is a more universal term that is used to designate the manifestation of all creative life force, while the word *Apana*[9] is derived from *Apa* which means "away", "off" and "down". Significance of these two terms emphasizes the purpose of practicing *Yoga*. There are four main paths[10] of *Yoga* by which its whole concept can be estimated those are as follows:

1) *Bhakti Yoga*– Path of Devotion or Love.

2) *Gnana Yoga* – Path of knowledge and Wisdom.

3) *Karma Yoga* - Path of Action.

4) *Raja Yoga*- The path of Psychic control.

Modern Review

Functional anatomy for *Yoga* is a reliable aspect which has to be focused because relevant information about musculoskeletal anatomy can be located quickly and easily. In most of the cases one can upheld the injuries occurred during practice of *Yoga*.

While practicing *Yoga* most involved region of the body is Core region, this includes Lumbopelvic-hip complex[11] includes lumbar vertebrae, pelvis, hip joints, ligaments and muscles that produce or restrict movement of these segments. Core muscles include abdominals, iliopsoas, erector spinae, pelvic floor muscles, deep gluteal muscles and quadratus lumborum. Core itself implies deep and central[12]. The anatomical structure that is the deepest and most central is the spine. Core is directly related to the spine specifically, and the torso in general. There is also a dynamic component to the core. This aspect of core is all about movement and the specific control of movement from the deep intrinsic muscles[13].

The stability of all these will be attained by proper practice of *Yoga*. The whole concept of this can be made under Core Stability[14], the main concept of which is the trunk must be stable if the extremities that are attached to it are used safely and effectively. It is must to have balanced relationship with the core muscles. By balance, both strength and flexibility of the core muscles are equally important. This makes them more adaptable. In *Yoga*, this adaptability is used to move in and out of postures. It is at these moments that *Yoga* practitioners absolutely need the strength and stability of their core so that they can perform it. When our centre of gravity is in line with gravity itself, relative to our body parts, we are in balance and in control[15].

If the core region is not stabilized effectively, excessive movement of the pelvis and lumbar spine may occur during activities like Sports, *Yoga* etc. This happens during demanding and repeated practice of *Yoga*; the lower back will be under strain and ultimately results in pain[16]. The core stability develops by reciprocal inhibition of Agonist – Antagonist muscle group in each of three planes of movement[17].

In the Saggital Plane: Rectus Abdominis, Transverse Abdominis, Erector Spinae, Multifidus, Gluteus maximus and Hamstring.

In the Transverse Plane: Gluteus Medius, Gluteus Maximus, Piriformis, Superior and Inferior Gemelli, Quadratus Femoris, Obturator Externus and Internus, External and Internal Oblique, Iliocostalis Lumborum and Multifidus.

In the Frontal plane: Gluteus Maximus and Minimus, Quadratus lumborum, Adductor Magnus, Adductor Longus, Adductor Brevis and Pectineus.

CONCLUSION

The purpose of approaching *Yoga* scientifically will converge to improved performance and fewer injuries when we have a fundamental knowledge of their Anatomy and Biomechanics. Depending on the type of *Yoga* prevalence to be given for underlying structure, overall focus to be on Core region (Lumbo- Pelvic Hip complex). The systemic way of practice of *Yoga* enhance the power of body, mind and soul where it's improper practice will ends up in impairment of health.

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