

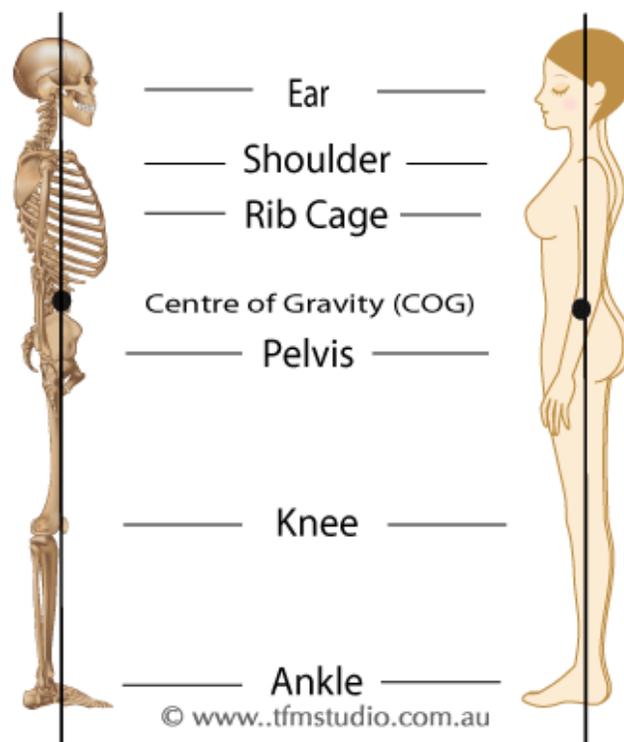
# There is more wisdom in your body than in your deepest philosophy.

*Nietzsche*

*By Carlyn Sikes, CIYT Int. Jr. I, CYT, SCC Yoga Program Director*

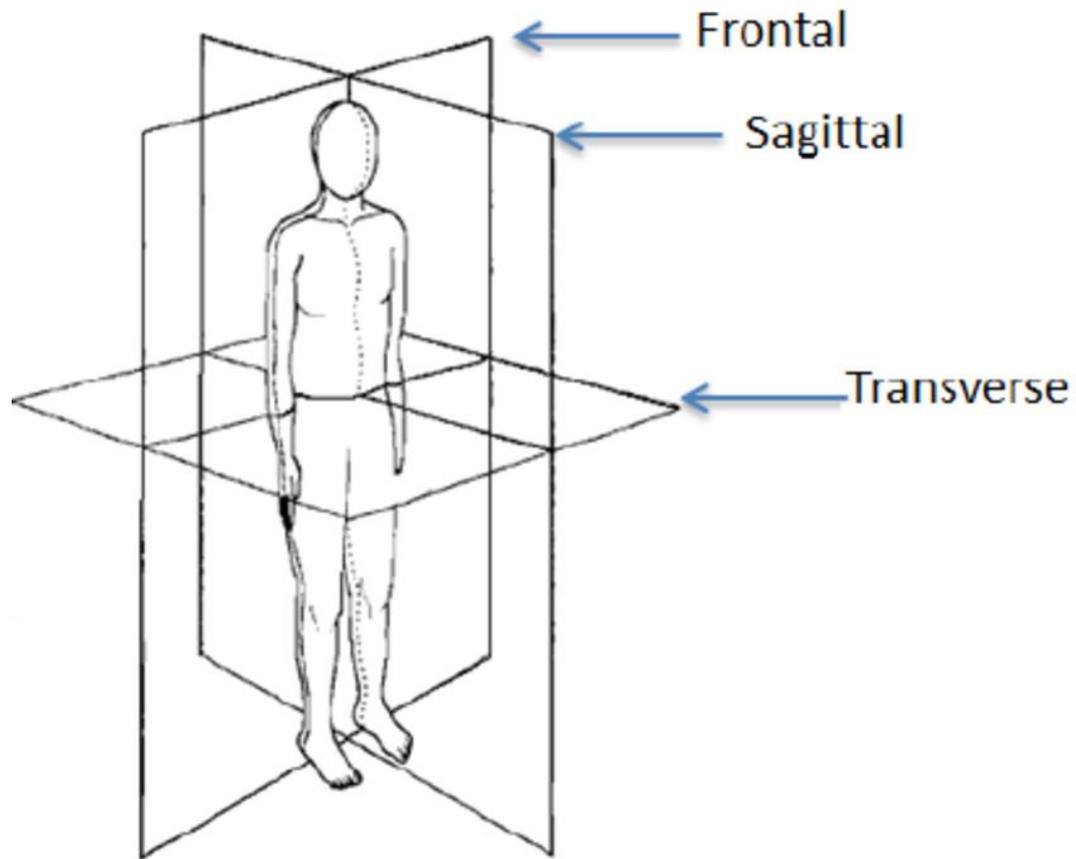
## POSTURE

The definition of good posture begins with the knowledge that the body is in sync with the plumb line of gravity. The plumb line (Figure 1.1) shows an imaginary line that runs in front of the ear, in front of the shoulder, through the hip, the front of the knee and in front of the ankle. When the body segments organize around the plumb line it forms the foundation for good posture.



(Figure 1.1)

This plumb line is further defined by cardinal planes, part of the study of movement science, which divide the body into two halves right and left (Sagittal Plane), front and back (Frontal plane) and top and bottom (Transverse plane). Where these three cardinal planes converge the plumb line of gravity is found. This also defines the center of gravity of the human body which is in the region of the pelvis and brings stability as well as intuitive movement awareness. Good posture comes when the bony structures of the body organize around the plumb line. (Figure 1.2)



(Figure 1.2)

Good posture has an effect on all the various systems of the body. All body systems (cardiovascular, pulmonary et.al.) can work at their optimal level without impediment when good posture is present. According to a TED-ED video published in the Huffington post “your posture is the foundation for every movement; poor posture inflicts extra wear and tear on joints and ligaments, increases the likelihood of accidents and makes your lungs less efficient; it has a lot to do with how well your body adapts to the stresses placed on it.” (“Yes You Really Should be Standing Up Straight, TED-Ed, Huffington Post, 8/03/2015) Posture is a function of the skeletal system with the muscles establishing how an individual sits, stands and moves. The muscles respond to stimuli which, in the case of posture, could have very negative results. “Poor posture can have ill effects that radiate throughout the body, causing back and neck pain, muscle fatigue, breathing limitations, arthritis joints, digestive problems and mood disturbances....We live in a gravitational field, and when our bodies are out of line with the vertical, certain muscles will have to work harder than others to keep us upright. This can cause undue fatigue and discomfort that can outlast the strain that caused them..... Any repetitive or prolonged position “trains” the body’s muscles and tendons to shorten or lengthen and places stress on bones and joints that can reshape them more or less permanently. (Brody, Jane, NYtimes.com, 12/28/2015)

Through participation in sports and other kind of movement activities like dance many have been taught posture. Some of this is stylized posture as in ballet or specific to performance of some skill such as in many sport activities. Posture is also picked up in the home in that children will mirror how their parents carry themselves. Many individuals have been taught a form of military posture where the body is very erect with the shoulders thrown back. This is close to being in line with the vertical but can become somewhat rigid and would then be counterproductive to the aims of good health. To be proficient in movement, even in performing daily tasks, good posture is a benefit in that through efficiency the various parts can work in a coordinated way with as little effort as possible. An efficient posture would be malleable, a posture that responds to gravity and the various fluctuations that come. This kind of physical (skeletal) correctness if achieved during movement as well as stillness it can enhance skills, prevent injury, improve overall health of the physiological as well as the skeletal body, and create an environment for deeper states of consciousness.

## **YOGA AND POSTURE**

Positioning of the body for optimal performance is necessary to excel and progress in any physical activity. However, the idea of what optimal alignment/posture is can vary slightly from discipline to discipline. In Yoga, and more specifically Iyengar Yoga, the physical positioning of the body not only increases movement efficiency, decreases risk of injury, allows students to progress and expand their movement capacity, it also creates an environment for improvement of health in a wide range of conditions beyond musculoskeletal injury and supports the inward journey towards union with the divine.

Any movement discipline that is effective operates in conjunction with the plumb line of gravity when defining posture. That is no different in performance of Yoga asana. "Alignment based" is popping up more and more as a description for Yoga movement classes. This appears to be a very superficial reductionist explanation of what a prospective yoga student might expect should they show up at a class. Oftentimes untrained teachers take an idea that they might understand in part and then implement at a very basic level; however "alignment based" does not describe the far reaching potential of physical posture. Not only does proper physical posture positively impact at the physical level but in the deeper implementations of Yoga practice in transformation of organic health, emotional and mental health. This was the work of Guruji Iyengar and his discoveries were implemented clearly and effectively in his method of teaching Yoga. Iyengar yoga has a very particular teaching method where students are taught to see the shape of the pose and then implement actions to enhance and maintain the pose for a prescribed length of time. Senior Iyengar Yoga Teacher Carolyn Belko said that what sets Iyengar Yoga apart is the methodology. Beyond teaching physical alignment in the pose Iyengar teaches right action which plugs into the body's natural healing ability. As stated by Dr. Krishna Raman "Every organ, muscle, tendon, nerve, gland, bone has to be precisely placed....The physical adjustments coordinated and motivated by the psyche creates physiological changes in the body" . (Dr. Krishna Raman, A Matter of Health p. 306)

## **ASANAS TO IMPROVE POSTURE**

The transformation through Yoga begins with Asana for most people. The third limb of the Astanga path as outlined by Patanjali Asana means posture. In executing asana there would be a posture within the posture. There are many different asanas, some say there as many as 8,000 (anecdotal) that are based on the many movement pathways possible. Asana are divided into classes that have evolved to act on the various parts of the body and take in mind every possible direction that the human body can anatomically stretch or contract. There are standing, seated, seated forward extensions, backward extensions, hand balancings, inversions, twists and asanas that are designed to rest the organic body. In Iyengar Yoga standing asana are what a beginning student learns first to build strength, increase flexibility, increase stamina, build confidence and work on long standing holding patterns. When learning asana specific and detailed actions are employed that bring about the positive health that could easily be related to efficient posture.

Alignment of the physical body in Iyengar Yoga is begun in the first pose of the first class any student will take. One of the primary asanas that forms the basis for this learning is Tadasana (*Tada*: mountain) or Samasthiti (*Sama*: upright, straight; *Sthiti*: standing still, unmoved, steadiness). Figure 1.3 below shows an awareness of the plumb line of gravity pictured previously. Tadasana is the first standing pose taught and as one progresses throughout the various standing asana this stabilizing pose that teaches us anatomical alignment is a beginning point and a returning point after each standing asana. Figure 1.3 below shows Guruji Iyengar in this asana.

With regard to Tadasana Mr. Iyengar states: "People do not pay attention to the correct method of standing....Owing to our faulty method of standing and not distributing the weight evenly on the feet, we acquire specific deformities which hamper spinal elasticity.....If we stand with the body weight thrown only on the heels, we feel the gravity changing; the hips become loose, the abdomen protrudes, the body hangs back and the spine feels the strain; consequently we soon feel fatigued and the mind becomes dull." (Iyengar, B.K.S.; *Light on Yoga*;



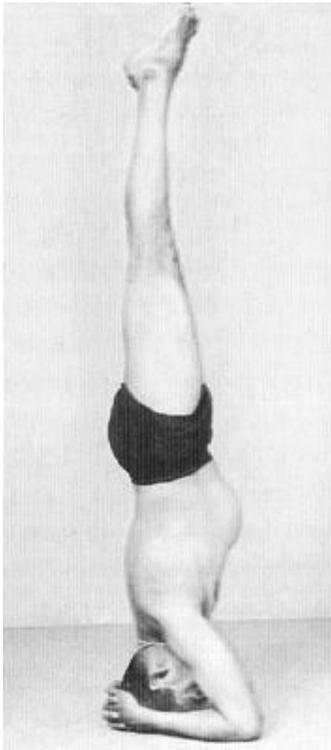
Figure 1.3

In this pose you can see that Mr. Iyengar is standing erect and tall “like a mountain” and appears to be very stable in this posture. To achieve that the following actions are taken:

1. Stand erect with the feet together and the big toes and the heels touching. See that the weight of the body is neither on the heels nor on the toes but in the center of the arches.
  2. Do not tighten the toes, but stretch them from the bottom and keep them relaxed.
  3. Keep the ankles in line with each other.
  4. Tighten the knees, pull the kneecaps upwards and tighten the quadriceps. Keep the shin bones in line with the thigh bones. Breathe normally.
  5. Compress the hips and tighten the buttocks.
  6. Keep the spine erect, raise the sternum, expand the chest. Do not protrude the abdomen but lift it upwards.
  7. Keep the neck erect and the head straight. Do not tilt forwards or backwards. Look straight ahead.
  8. Keep the arms by the sides of the body, extending downwards and keep the palms facing the thighs, in line with them. Do not lift the shoulders. Keep the fingers together.
- (Iyengar, Geeta; Yoga: A Gem for Women; Timeless books, Canada; 1990; pg. 121)

The importance of this pose cannot be overemphasized. “Do not consider this pose unimportant since it is very simple. The more you attend to it, the more you begin to realize the defect in your own body’s position.” (Iyengar, Geeta, Yoga: A Gem for Women, Timeless Books, Canada, 1990, pg. 121) When the effort described is put forth, the above techniques can be felt and the benefits can be observed.

The class of asana that carry untold health benefits are the inverted poses of which there are 4 (not including the variations performed while in the pose.) These are Salamba Sirsasana (head balance), Salamba Sarvangasana (shoulder balance), Halasana (plough pose) and Viparita Karani (legs up the wall pose; draining of the lake pose) Salamba Sirsasana is considered the King of the asana for the numerous health benefits it brings. “The literature on hatha yoga waxes eloquent on the wonders of the headstand. Kavalayananda maintains the that the posture benefits the special senses, the endocrine glands, and the digestive system, to name only a few, and Sivananda, in his usual style calls the headstand ‘a panacea, a cure all for all diseases’”. (pg. 445, Coulter, H. David, Anatomy of Hatha Yoga: A Manual for Students, Teachers and Practitioners; Body and Breath, Inc.; Honesdale, PA 2001)



The most obvious benefit of Headstand is to the cardiovascular system where the reversal of blood occurs from going upside down. This assists the heart with venous return. In addition to the return flow of blood to the heart the brain is bathed in fresh blood as well as a proper blood supply to the pineal and pituitary glands that are located in the brain. These two glands ensure the proper functioning of the other glands of the endocrine system, one of the body systems positively impacted by Yoga practice.

As in Tadasana there is an alignment to Sirsasana that would bring greater benefit than if not present. “Accuracy of alignment provides a stability! Understanding the “stable” pose awakens the intelligence of the practitioner for refinement in practice. Perfect alignment is always important...” (P. 40; Raman, Dr. Krishna S., Suresh, Dr. S.; Yoga & Medical Science; East-West Books; Madras, India; 2003)

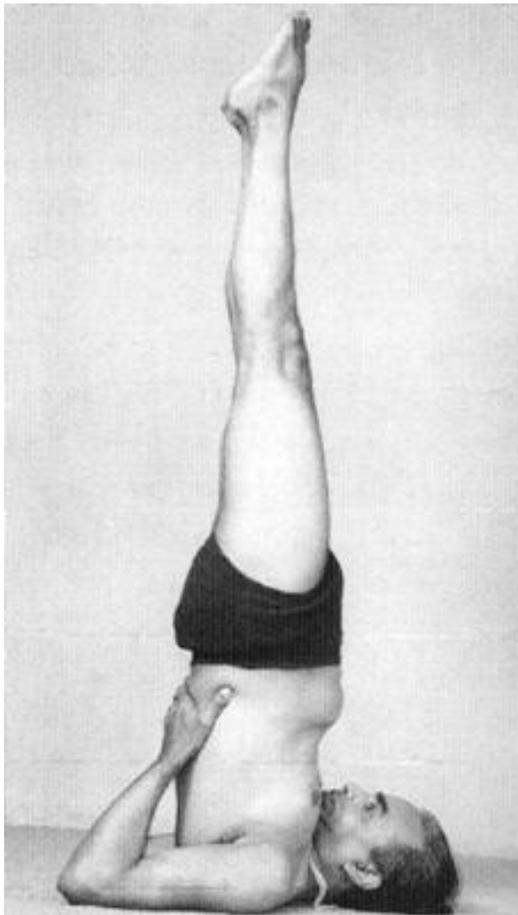
Figure 1.4. B.K.S. Iyengar in Salamba Sirsasana

Salamba Sarvangasana or shoulder stand translates as “supported all limb posture” and is the companion asana to Salamba Sirsasana; it is the companion in that if Sirsasana is the King of the asana then Salamba Sarvangasana is the Queen.

“The importance of Sarvangasana cannot be overemphasized. It is one of the greatest boons conferred on humanity by our ancient sages. Sarvangasana is the Mother of asanas. As a mother strives for harmony and happiness in the home, so this asana strives for the harmony and happiness of the human system.”

B. K. S. Iyengar

Sirsasana celebrates power and consciousness while Sarvangasana is a nurturing pose. These asana provide a balance to the system and it is recommended that they be practiced together, Sirsasana first and then Sarvangasana. Sirsasana is a balancing asana that strengthens the neck while Sarvangasana has the opposite effect on the neck and stretches it as can be seen by the placement of the head and firm chinlock depicted in Figure 1.5. Like Sirsasana Sarvangasana it is an inversion and like Sirsasana many health benefits are attributed to its practice. Shoulderstand positively impacts the endocrine system as the shape of the pose brings blood flow to the thyroid and parathyroid glands situated in the neck. Other health benefits of Shoulderstand are as follows:



- \*Venous blood is returned to the heart for purification without any strain due to the force of gravity (as in Headstand)
- \*Oxygenated blood is circulated to the chest area, relieving breathlessness, asthma, bronchitis, throat ailments and palpitations
- \*Positively impacts anemic conditions and increases vitality in those that are weak
- \*Common ailments such as colds and nasal disturbances are cured by the practice of this posture.
- \*Soothing to the nervous system and good to practice when one is tensed, upset irritated, fatigued, or when suffering from nervous breakdown and insomnia
- \*An excellent aid to digestion and elimination, to free the body of toxins, to rid one of constipation, to cure one of intestinal ulcers, colitis, and piles
- \*Corrects urinary disorders, uterine displacement and menstrual disorders
- \*Gives peace, strength and vigor to the practitioner and is recommended as the best recuperative treatment after long illness
- \*Regular practice will help a practitioner avoid prolonged illness and maintain robust health

Figure 1.5 B.K.S. Iyengar in Salamba Sarvangasana

It is recommended that Salamba Sirsasana and Salamba Sarvangasana be practiced daily to reap the many benefits offered by these inverted asana. For beginners Sarvangasana is learned first and then after a period of time when certain postural actions can be maintained Sirsasana becomes part of the practice. In viewing these asanas they maintain some of what was learned in Tadasana mostly with regard to the vertical lift required to practice these asana effectively. Not all asana resemble Tadasana so directly but still maintain elements of what is taught in the

preliminary standing asana. The following asana, Setubandha Sarvangasana is a backbending asana that becomes part of the shoulderstand cycle and is often practiced with Shoulderstand.



Figure 1.6 B.K.S. Iyengar in supported Setu Bandha Sarvangasana

Figure 1.6 shows a backbending pose that brings many health benefits with its regular practice. The above picture shows an intense supported variation of the pose that would not be suitable for beginners. Setubandha Sarvangasana, construction of the bridge pose, brings the weight on the shoulders as in Sarvangasana with the rest of the body in a backarch as if forming a bridge. At a postural level this asana can bring attention to tight muscles in the back, hips and shoulders. With this awareness a postural shift can occur. The health benefits of Setubandha Sarvangasana are:

- \*it can relieve backache and strengthen the back muscles
- \*rejuvenate the pelvic organs
- \*improve conditions such as inferiority complex, unsteady mental condition in menopause and hot flashes
- \*relaxes the nerves
- \*removes headaches and fatigue
- \*improve breathing
- \*helps regulate blood pressure.

Another backbending posture is Dwi Pada Viparita Dandasana or the Yogi's salutation. As you can see in Figure 1.7 below the hands are in the same position as Salamba Sirsasana. This depiction of the pose is very dynamic and obviously for more advanced practitioners. This is an

asana that is taught to beginning students with the support of props such as a chair or bolsters and preceded by other more suitable preliminary backbends. It can also be modified for students with certain health and mental conditions.



Figure 1.7 B.K.S. Iyengar in Dwi Pada Viparita Dandasana

Many physical and emotional health benefits are attributed to this asana. These are as follows:

- \*The chest expansion gives a feeling of happiness and joy;
- \*benefits who are depressed, weak, sensitive, and emotional;
- \*soothes and relaxes the nerves; improves symptoms of menopause;
- \*broadens the expanse of the chest and improves respiration and circulation;
- \*relieves pain in the sacrum and coccyx;
- \*the spine becomes elastic, firm and healthy;
- \*removes dullness and laziness; brings cheerfulness and courage. (Geeta Iyengar)

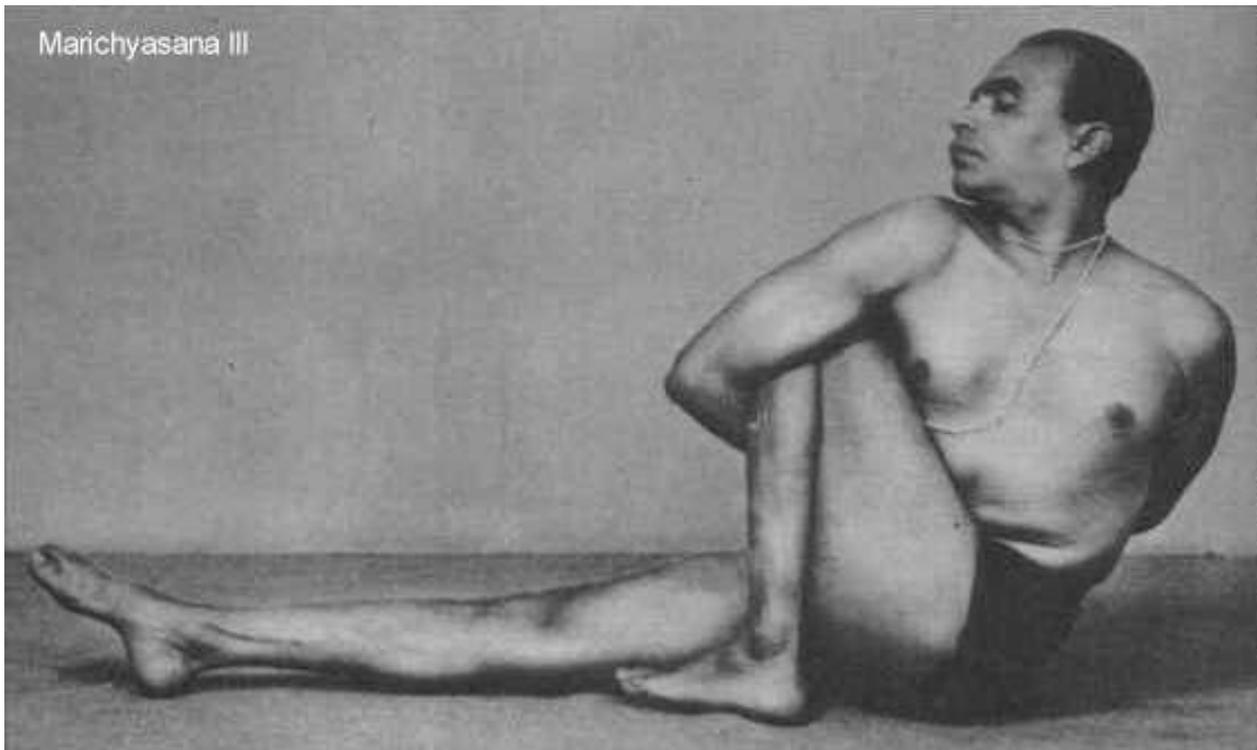


Figure 1.8 B.K.S. Iyengar Maricyasana III

Maricyasana III, Sage pose, is a lateral twisting asana. Twisting asana keep the spine in balance as well as have a positive effect on the internal organs. Lateral extensions bring the spine back to a neutral extension after backbends and forward bends. The benefits of this pose are:

- \*relief for splitting backaches
- \*relief for lumbago and pains in the hip
- \*The liver and the spleen are contracted and so are toned and cease to be sluggish
- \*Strengthens the neck
- \*Sprains in the shoulder and displacement of the shoulder joints are relieved.
- \*Shoulder movements become free.
- \*The intestines benefit from this asana.
- \*Helps to reduce the size of the abdomen.

(Iyengar, B.K.S; Light on Yoga; P. 257)

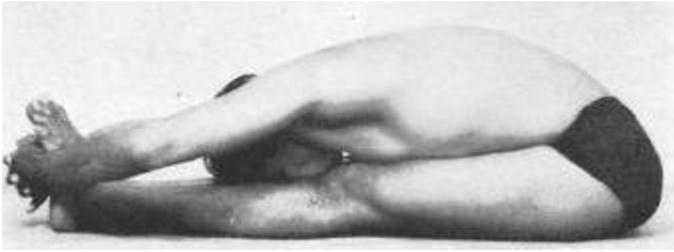


Figure 1.9 B.K.S. Iyengar Paschimottasana

Paschimottasana, Figure 1.9, is a seated forward extension. Paschima means the west with the back of the body signifying that in this asana. The back of the body from the head to the heels is stretched. "Paschimottasana is the foremost of all asanas. Its effect is that the life force flows through the very intricate channels called nadis, gastric fire is kindled and the stomach becomes free of all diseases." (Iyengar, Geeta; Yoga: A Gem for Women; p.150—151) Other health benefits are:

- \*The pelvic region is stretched and the blood circulation there is stimulated
- \*The ovaries, the uterus and the entire reproductive system are revitalized and their efficiency is enhanced
- \*The spine is horizontal and parallel to the ground so that the heart is rested
- \*Has a soothing effect on the mind; an upset, irritated and restless mind becomes tranquil and angry, passionate moods, etc., are calmed down
- \*It sharpens memory and brings clarity of thought

Savasana, Figure 1.10, corpse pose is the final pose in most yoga asana classes and the first pose in many Pranayama classes. A student is to rest as if dead. Both the body and the mind are still in this pose. Being motionless for some time while the mind remains still teaches relaxation. "The body and the mind are interdependent and interconnected. They are inseparable in the art of introspection. Savasana is a link connecting the body and the mind...it leads one to the spiritual path." (Iyengar, G., "Yoga: A Gem for Women", p. 290-295) The benefits of Savasana are:

- \*energy which flows outward from the body is deflected to flow inwards
- \*invigorating and refreshing
- \*helps the body and the mind to recuperate after long serious illnesses
- \*individuals suffering from respiratory diseases, heart trouble, nervous tension and insomnia derive benefits as it soothes the nerves and calms the mind
- \*practice of Savasana brings sound and refreshing sleep devoid of dreams.



Figure 1.10 B.K.S. Iyengar Savasana

***"The whole body has to act. "***

B.K.S. Iyengar

Clearly these are poses that require some preliminary work and require preparation through the practice of other asana. From the beginning through the most advanced asana elements of posture learned in Tadasana and are implemented in each asana. The preceding asana appear extreme but in order to re-direct overflexible muscles, strengthen weak muscles, develop coordination and body an awareness these would be a progression towards discovering what needs to change for a deeper awareness of posture as well as the health benefits to be gained. Returning to Tadasana and observing again where the flow of weight is into the feet relative to

the other parts of the body begins to show how posture improves with practice and illustrates the benefits that Mr. Iyengar ascribes to Tadasana.

There is value in practicing Yoga Asana even at a superficial level without the application of scientific movement principles, art and a desire to transform. Any system of movement will give benefits to those that haven't moved or moved in particular ways. Humans were made for movement and not be sedentary. However, implementing good postural habits into all movement activities brings better results and especially in the area of physical health which is defined here as relating to orthopaedic issues of the physical body.

The previous asana are those that can improve posture as they target areas where most people are weak and tight eventhough that to do them there would need to be a base in practice and some understanding of what to do while in the pose. A certain amount of therapeutic benefit comes from a regular practice of Iyengar Yoga. Students notice not just changes in their posture, in their physical presence in terms of strength and flexibility but also in mental capacity and in healing of orthopaedic and systemic conditions. All of this is then applied in therapeutic implementation.

### **Iyengar Yoga research**

The following three research studies were conducted utilizing Iyengar Yoga and are included because of the success rate reported. These are also included because alignment is utilized to attain better posture in the method of delivery as part of the healing process.

The Iyengar Yoga Institute of Berlin and the Medical University of Berlin aimed to investigate the effectiveness of Iyengar Yoga in chronic neck pain using a randomized controlled clinical trial. The effectiveness of a 9-week Iyengar Yoga program was evaluated against a standard self-care exercise/education program.

Participants of both sexes between the ages of 18-60 with chronic neck pain were eligible for participation. The participants were also required to report about painful restriction of cervical spine mobility. The eligible participants were randomly assigned to either the 9-week Yoga group with Iyengar Yoga interventions once a week over 90 minutes, or a self-care/exercise program. 38 patients for Iyengar Yoga (Yoga group) and 39 patients were in the self-care group (control).

Iyengar Yoga classes were taught at the Iyengar Yoga Institute of Berlin. Postures specifically addressed neck pain complaints and were developed in communication with B.K.S. Iyengar. Each class built on the previous ones. Patients were asked to practice selected postures at home for 10 to 15 minutes, 2-3 times a week.

The results of this study favored the efficacy of Iyengar Yoga for treatment of chronic neck pain. The results showed a large margin of relief in the group practicing Iyengar Yoga from 44.3 mm to 13.0 mm after ten weeks. Pain in motion was reduced from 53.4 mm to 22.4 mm by Iyengar

Yoga. The self-care control group showed pain at rest from 41.9 mm to 34.4 and pain in motion from 49.4 to 39.9. (*Iyengar Yoga for Chronic Neck Pain: A Randomized Controlled Clinical Trial*, Traitteur, H., Yoga Rahasya Vol. 20, No. 1: 2013, ISBN 0973-6239)

Another pilot study conducted at the University of Pennsylvania School of Medicine Division of Rheumatology was to research the feasibility of using yoga in the tradition of B.K.S. Iyengar to treat the symptoms of osteoarthritis of the knee.

The medical management as set forth in the guidelines of The American College of Rheumatology emphasize the use of nonpharmacologic interventions including exercise. Exercise can be difficult for patients and at the time of this study (2005) there had not been that much research into alternative forms of therapy such as Yoga. The design of this study was to observe if Iyengar Yoga would be effective in treating the symptoms of osteoarthritis.

The implementation of Iyengar Yoga beyond other forms is that the Iyengar approach emphasizes strength, flexibility and relaxation with particular attention to alignment of body structures. It also emphasizes the important of the proper sequence of postures and how it can be made accessible to all through the implementation of props and other modifications. This is an important feature when dealing with older, out of shape individuals who were the subject of this study. The qualified participants for this study were over 50 years old with symptomatic osteoarthritis in at least one knee for at least 6 months prior to entry into the study. Participants were not involved in an exercise regimen and were new to yoga.

Marian Garfinkel, Ed.D., a certified Iyengar Yoga teacher and one of the primaries in this study set up the design. She developed a sequence of 15 postures taken from Light on Yoga. The Iyengar method takes into account both underlying anatomical structure and body alignment. These postures were taught over 8 weeks during weekly 1 and 1.5 hour sessions. Of the 7 women that completed the study statistically significant improvements were made in their levels of pain and disability. Why yoga may be of benefit in treating symptoms of OA are not known, the fact that there is benefit was verified by this study. Prior studies have shown that yoga can "improve cardiovascular fitness, enhanced diaphragmatic breathing, strength, flexibility and/or improvements in body awareness and in **positioning the body in space at rest and during motion**" (*Iyengar Yoga for Treating Symptoms of Osteoarthritis of the Knees: A Pilot Study*, Kolasinski, S., M.D., Garfinkel, M., Ed.D, et al, The Journal of Alternative and Complementary Medicine, Volume 11, No. 4, 2005, pp. 689-693)

A third study posted in the International Journal of Yoga Therapy in 2003 goes into great detail about the rationale and method of Iyengar Yoga for low back pain. It also includes the results of a 16 week pilot study utilizing Iyengar Yoga for non-specific low back pain. The results for 20 subjects that completed the Yoga program, not the control group, will be reported here. Subjects in the yoga therapy group reported significant improvements in the primary outcome and in a number of secondary outcomes compared to the control group after completion of the program. "a 77% reduction in functional disability, 64% decrease in present pain, and 25% increase in perceived control over pain. (*Therapeutic Application of Iyengar Yoga for Healing*

*Chronic Low Back Pain*", Williams, K., Ph.D, Steinberg, L., Ph.D., Petronis, J., M.S., International Journal of Yoga Therapy, No. 13, 2003 55-67)

Explained in this is how posture plays a part in the healing process. Posture is evaluated from Tadasana (Mountain Pose). This allows and instructor to observe signs of dysfunction and imbalance in specific regions of the body. Other postures are then observed to see how the dysfunction plays out. Ultimately Iyengar Yoga works to enhance alignment, flexibility, mobility and stability in all muscles and joints that affect spinal alignment and posture. It is this attention to detail in alignment that assures a positive outcome when dealing with matters of health.

It will take consistent research to determine if the fact of implementing alignment actions based on good posture will enhance the therapeutic benefit of Yoga asana in not just orthopaedic conditions but other health related problems. The promising outcomes from research in Iyengar Yoga seems to support this notion. This from the simple fact that Iyengar Yoga is executed in a precise manner with regard to how the physical body "is" in the asanas. The aim is to enact an alignment while in each and every pose practiced. To further explain, an Iyengar Yoga practitioner employs precise actions that bring the body into the shape of the pose; or in other words, actions that create and sustain the shape of the pose for a more positive flow of energy within. This energy could be enhanced blood flow which would bring lymph, oxygen and nutrients into undernourished areas of the body. This is what a well aligned posture would bring.

In the opinion of Dr. Krishna Raman when asked what the best approach to learning Yoga his response is as follows:

"Considering the human body, only certain rules can work. Relief for certain problems can be obtained from some methods, but when we consider serious, mainstream, hard-core medical disorders like prolapsed disc with nerve root compression, cardiomyopathy, glaucoma, ruptured achilles' tendon and cruciate ligaments etc. in my clinical experience, "Iyengar Yoga" is one of the best....I have examined patients treated for such ailments by various schools and have not found significant clinical improvement. This is my objective opinion as a physician without any conflicting interests." (*"Yoga & Medical Science"*, Dr. K. Raman; East-West Books, Madras, India; pg. 42; ISBN: 81-88661-09-0)

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