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Principles of Alignment and Integration

What is the best way to develop your alignment skills? Will scrutinizing pictures of yoga postures in books, blogs or journals, or watching YouTube videos be enough? Can instructions once heard in a class or workshop be remembered and more importantly, can they be trusted? Does the guidance match your skill level and physical conditioning?

An alignment protocol must be reliable and reproducible. It should consistently increase your skills and refine your practice. The principles of alignment must be consistent with human anatomy and postural mechanics. Results will be apparent in flexibility, strength, balance, endurance, and coordination.

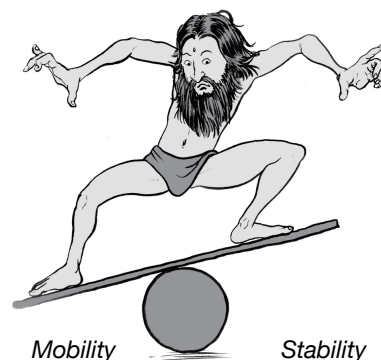
When the sum of the parts functions harmoniously and with fluidity, *Integrative Alignment* is at work. With it, a beginner's practice can demonstrate the grace and refinement seen typically by an advanced practitioner. At first, it may seem like a daunting task to learn but the actions themselves are not overly complex. Positive feedback is received constantly if the process is taken slowly and step-by-step.

There is one common and persistent question, "if there can be variations in anatomy, how can one set of alignment principles be applied to everyone?" Anatomical anomalies in human structure are so common that it could be said that abnormality *is* the norm. There is a broad variety in shapes, forms, and sizes. However, the principles of alignment are based less on anatomy than they are on function. Function, or body mechanics, rarely changes. Students who have variations in their anatomy that might alter body mechanics have usually been well aware of them throughout their life, although this is quite rare. Use of yoga props enables many modifications.

Essentially, all human bodies all follow the same "owner's manual." Alignment does not change from person-to-person or from pose-to-pose. Instead, it is a reliable set of generic principles that apply for all students, in every tradition and style of yoga. *Integrative alignment* is based upon the inner actions and mechanics of the human body, not the often-conflicting, outer forms and appearances that an asana may take.

Hatha's ultimate balancing act: Mobility vs. Stability

Asana perform a perpetual balancing act between mobility and stability. Mobility requires flexibility. Stability requires strength. Specific alignment actions increase either mobilization or stabilization. One aspect of yoga that makes it a “practice” is the art of determining what each moment requires, either with mobility or stability, and knowing the techniques necessary to achieve the goal. Utilizing alignment principles correctly ensures being in sync with the desired action.



Interdependence

Each body part or region moves independently according to its own unique design. At the same time, all parts maintain an integrated relationship with all other parts. This is called *interdependence*.

Interdependence allows the body to be dynamic, fluid, and responsive to the ever-changing positions and stresses it must negotiate. Essentially, body mechanics is a sophisticated system of organic cogs and wheels, pulleys and levers that influence not only large joints and muscles but also every structure down to a cellular level. Relationships between body regions are not static or fixed, nor are they forced to rigidly perform a pre-determined set of actions in relation to each other.

Some patterns of interdependence are obvious. For example: the shoulders contribute to the function of the hands and wrists. Those who keyboard many hours a day but are unaware of correct shoulder alignment may develop arm muscle fatigue with the potential for tendonitis and wrist issues.

Conversely, interdependence can activate improper body mechanics. For example: in Dancer's Pose, **Natarajāsana**, the rear hip extends. There is an interdependent relationship between hip extension and lumbar spine extension. If the two actions occur without proper mechanics and alignment, lumbar hyperextension and the potential for disc and nerve root compression is likely.

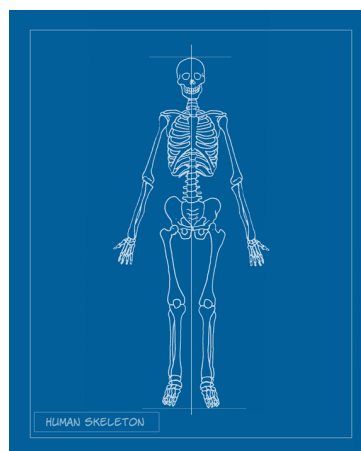
Seeing the body through the lens of interdependence can reap much integrative value. This occurs in the one originating, interdependent form of all asana - **Tadāsana**, the Mountain Pose.

Human architecture

Human structure follows one underlying, architectural design. As with a building's blueprint, the draft provides for stable foundations that supply optimal support and load bearing. Yoga asana also follow a blueprint that enables structural support and modifications for flexibility. This design guides the yogi into postures that offer resilience and longevity and resist injury and breakdown.

Basic yoga poses follow the body's blueprint closely. The simpler the posture, the easier alignment can be established without the additional challenges of balance, strength, or hyper-flexibility. Since alignment is what is fundamental to rehabilitation and healing, yoga therapy primarily employs basic yoga postures.

If the blueprint cannot be followed, the structure cannot be built safely!



“First there is a mountain, then there is no mountain, then there is.” *Donovan*

Tadāsana, Mountain Pose, is the blueprint for alignment in every asana. The steps that form **Tadāsana** create the posture that delivers maximal support and mechanical efficiency.¹ Some bodywork systems recognize **Tadāsana** as the “neutral” posture.

It can be fairly argued that there is only one asana in yoga: Mountain Pose that can be expressed in 8.4 million forms.

As postures advance into more complex configurations, the blueprint of Mountain Pose becomes obscured. This adds another facet to yoga as being a practice of discovery as it seeks to find **Tadāsana** in every one of its exquisite manifestations.



Tadāsana

The “baby bear” intention

In Astronomy, there is a concept called the Goldilocks³ Zone. It distinguishes regions in the universes that meet the precise criteria necessary for life to exist. They present the “just right” conditions. Yoga practice has its own baby bear, “just right” standard. Yoga students constantly face the predicament of discovering how deeply to move into an asana in order for it to be challenging yet still remain safe. Yoga teacher Suzie Hurley of Tacoma Park, MD tells her students, “It’s not how far you go; it’s how you go far!”

Kofi Busia is a master yoga teacher, Sanskrit scholar, and one of B.K.S. Iyengar’s first Western students. His Santa Cruz, CA yoga classes are well known for long-held postures. While challenged with a ten-minute headstand, the class may be prodded by Busia with a stirring question or koan, “If you have already come out of the pose, why have you come out? But, if you are still in the pose, why are you still in it?” Perplexing inquiries such as these fill the minds of the students attempting to find the peaceful middle ground between over-efforting and giving up. As in the famous children’s story *The Three Bears*, the yogic journey begs the questions, “*What is too much? What is too little? What is just right?*” The art of yoga practice resides in mastering the “just right” degree of effort.



What is the “just right” effort?

Yoga postures are safest and are most therapeutic when they do not exceed the ability of the student to maintain a steady and solid foundation. The yogi must retain their alignment in the most challenged regions of the body while keeping their overall posture fully integrated. Asana practice that does not adhere to these basic guidelines becomes, unfortunately, a trauma-inducing experience. In Chapter 9, a physiological point of view is shared where the degree of effort should not exceed 10% beyond a current base or stable level. This number, as will be discussed, is based upon the inherent properties of connective tissue and its primary protein, collagen.

Initiate movement from regions of least mobility

Asana coordinate the movements of multiple regions of the body when constructing a pose. When aligning an asana, start with the least mobile and perhaps most challenging regions first. These will usually be those closer to the core where mobility is more subtle.

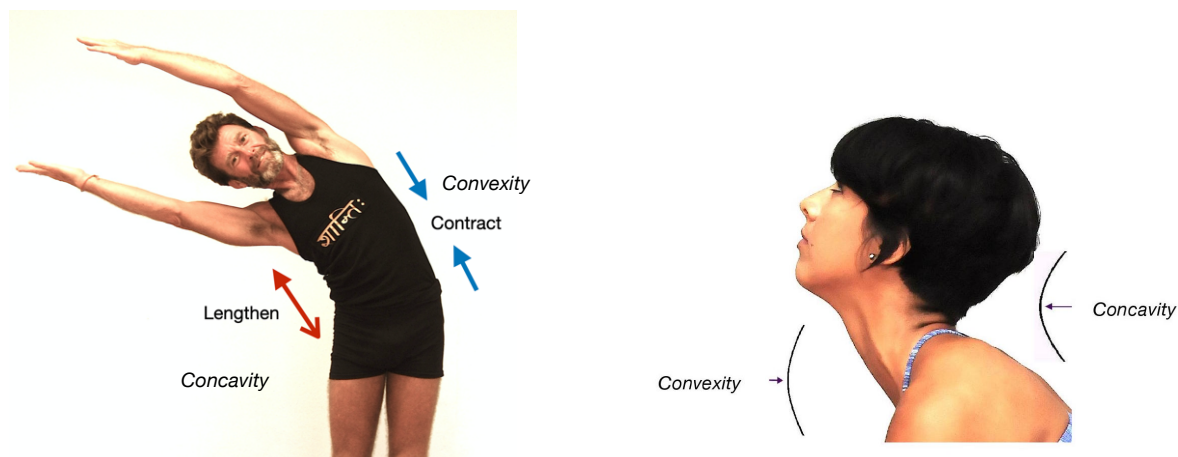
Examples of coordination of movement from least mobile regions:

- The upper thoracic spine is inflexible in comparison to the highly mobile shoulders. Begin movement of the shoulders and upper extremities by broadening the chest anterior. This mobilizes the upper thoracic spine. Movement is then followed by the more mobile aspects - the shoulder joints and then the extremities. Broadening the chest is sometimes expressed as leading from or “melting the heart”.
- The hamstring muscles have a dual action: a large range of knee flexion and a much smaller range of hip extension. In the sequence of Three-Legged Dog to Wild Dog, the lifted leg remains straight, hips rotate vertical as the straight-leg-hip extends. Then the knee bends. Finally, the heel of the bent knee presses inferior to increase internal rotation and thereby hip mobility. If the knee is flexed before the hip is extended, the range of hip extension reduces by as much as 50%.
- The flexibility of spinal curves reduces as they deepen. When moving the spine, first lengthen and straighten the spinal curves. This decompresses the spine and increases its mobility.
- Initiate movement from the core. Move first from the regions of the body closer to the midline (core). Then, move the peripheral regions after the core is fully engaged. This stops the faster and more freely moving body parts from exploiting the limitations of the slower ones. For example: first move from the chest, then the shoulder girdle, the arms, and finally, the hands. Although dancers know that we are more expressive with our extremities, yoga is instead, internally-focused and grounded.

Curves of the spine: Convex vs. concave

Convexity- outward side of curve Concavity- inward side of curve

The following concept may seem counterintuitive yet will probably forever change the way you engage the spine. The *convex* side of a curve moves farther and faster than its *concave* side. As the convexity lengthens, it is more mobile, although its elongated muscles become weaker. On the cavity, the curve is compressed, becoming less mobile but with muscles shorter and stronger. When bending, lengthen the concavity (side being bent toward). Contract and shorten the muscles on the convexity, pressing the convex side toward the concavity. This prevents disc and nerve compression. When using yoga as therapy for scoliosis (lateral curvature), this concept is invaluable.



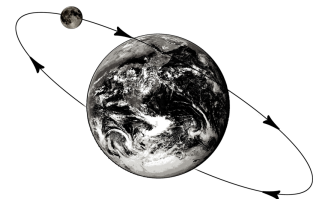
When moving the spine, lengthen the concavity and contract the convexity

The convexity of the thoracic spine rounds the upper back. The chest is concave with strong muscles that overpower the upper back and limits its extension. In comparison, the cervical and lumbar regions have a posterior concavity, which favors extension. Moving the least mobile region in “backbend” (extension) postures, initiate the asana from the upper thoracic spine. Thoracic extension continues throughout the posture while the next least mobile region, the lumbar spine, joins in. The cervical spine, the most mobile spinal region, follows next. “Brakes” are applied to the low back and neck to prevent excessive extension. This is done through the Bandha system. How to apply the Bandhas for their mechanical benefits will be discussed as various points in the book.

By habit and commonly by teachers’ instruction, the head, neck, and even the eyes misguidedly initiate backbend postures. Unfortunately, the least mobile region, the thoracic spine, is overlooked.

The periphery of the body moves faster than at the core ⁵

The moon, being peripheral to the earth, travels at speeds not possible on the earth, especially at its core. For humans, the regions closest to the midline of the body have less mobility and move slower than regions farther from the core. When initiating a posture, move and align, starting from the midline of the body. Continue outward to the rest of the body.



If the easier moving peripheral regions dominate and the powerful core muscles are not utilized, injuries occur, especially if this is a habitual and chronic pattern.

In **Utthita Trikonāsana**, Triangle Pose, enthusiastic students often bring their hand overhead well before the thoracic spine, chest and shoulders open and stack vertically. Instead, initiate Triangle pose by lengthening the lower side body, from the hip to armpit. Then, press the chest anterior (thoracic extension) and rotate the thoracic spine, turning from the heart. To whatever degree possible, the shoulders stack vertically. After full engagement of the spine and shoulders, the upper arm extends with the hand in line with the chest; the palm “holding the heart.”



Utthita Trikonāsana

The arm does not extend posterior past the shoulder. That would force the head of the humerus to be pushed anterior into a position where the shoulder is weakest. This is a common cause of shoulder injury.

In **Urdhva Hastāsana**, Mountain Pose with Arms Overhead, first lengthen the side bodies, from the hips to armpits. This extends the thoracic spine. The arms lift using the principle of *Shoulder Integrative Alignment*. See Chapter 31 for the many details in how to lift the arms with correct alignment.

Parsvakonāsana, Extended Side Angle, focuses on lateral flexion (side bending) of the torso. Often, students incorrectly flex the spine forward of their front knee before bringing the torso into position. Once the easier-to-engage anterior flexion has begun, it is more difficult engage lateral flexion. Lateral flexion is necessary to safely stack the shoulders vertically, revolve the chest upward, and keep the arms in line with the shoulders.

Taking a mobility inventory

When setting up a posture, the first step is to *establish a stable foundation*. Standing poses form their foundation with the feet. In sitting poses, it is the pelvis. How specifically each foundation aligns will be discussed throughout the book in the chapters that discuss that particular region.

Once the foundation is stable, flexibility is the focus. This is a step-by-step process. Joint mobility and muscle flexibility are evaluated and “ranked” from the most limited to the most freely moving. As the least mobile regions move, notice if there is increased strain or compensation in alignment anywhere else in the body. Engagement continues from lesser to greater mobility until finally, the most freely mobile region participates in the pose.

At first glance, this assessment approach may seem remedial and tedious. It is, however, comparable to a self-guided Yoga Nidra, the meditation practice that brings focus and awareness to the subtleties of each body part. Personal assessment and patience with step-by-step procedures are skills worth mastering. The seasoned airline pilot runs through a checklist before each flight. World-class concert pianists prepare with basic scales before each performance. But be assured that over time, the taxing, mental efforts fall away and the tedium becomes almost unconscious and the actions instinctive.

The hierarchy of the twist

The Seated Twist is an excellent pose to explore the step-by-step initiation of movement that begins with the least mobile region.

An important awareness regarding all revolved poses is that twists take place entirely in the spine and not the shoulders or pelvis, regardless of how easily they are able to participate. The pelvis remains stable, acting as a grounded end. The spine lengthens, from the tailbone to the top of the skull to increase its joint space before it revolves. The upper thoracic spine, the least mobile region, initiates the twist. The shoulders move in sync with the thoracic spine, not overtaking its speed or distance. The lower thoracic spine is usually the next least mobile region to engage, followed by the mid-lumbar spine, the mid-cervical region, and finally the upper cervical vertebrae. Finally, the eyes, being the most mobile of body parts, are the last to move in the direction of the twist.



Teaching cues that direct students to look in the direction of the twist or reach in that direction before the core is engaged, are disserving. Unless the goal is a deliberate neuromuscular exploration as used in the Feldenkrais Method® or a similar system, it is not appropriate or safe body mechanics.

Revolved poses are useful in revealing reduced spinal fluidly or erratic, excessive movements that are out of sync with the rest of the spine. Poor posture, misalignment, or flawed habits in body mechanics are often at the cause. Injuries or anatomical abnormalities also alter the fluidity of the spine. This awareness can be useful when applying yoga asana as therapy. Some hypermobile areas may require stabilization instead of movement. Forcing movement in these areas may not be appropriate, whether or not pain is produced.

Every yogi needs to be aware of any anatomical anomalies they may have and fully understand the nature and extent of any of their injuries.

Hypermobility

A joint that moves beyond the ranges of its design without any resistance is considered *hypermobile*. If a joint moves less than its capability, it is *hypomobile*. Joint range within normal limits is “just right.”

Hypermobility is not “normal” body mechanics. Its origin often has a genetic component or is the result of injury. It can also result from repetitive traumatic movement that overstretches the ligaments and tendons and eventually deteriorates the cartilage and discs.

Hypermobile joints easily move farther than what is typically safe. Not only do the supportive structures of a joint overstretch and weaken but other regions of the body may be forced to compensate due to their interdependence. These compensations may strain or injure regions that seem unrelated to the actual joints. Observing alignment from a whole-body perspective can detect imbalances and any developing compensations.

The illustration of a loose door hinge is similar to what happens to the joints of the body. Excessive, aberrant movement and misalignment will eventually damage the surrounding supportive structures. Seemingly unrelated areas can also suffer damage.

To function correctly and not a continued source of injury, hypermobile joints need to be identified and their instability controlled. Hypermobile joints should always be kept aligned, especially when force is applied during muscle contraction or deep stretching. Contracting (squeezing) the small muscles that surround the hypermobile joints can reduce joint instability. When ranking the hierarchy of movement, hypermobile joints are engaged last, whenever possible.



Hypermobile joints often inflame and eventually degenerate. As a result, their hypermobility reverses, becoming hypomobile due to *osteoarthritis*, ironically a protective mechanism of the joints. Yoga asana practice is an excellent therapy for arthritis as long as alignment is precise. Modifications to the poses and practice are often necessary to accommodate for the severity of the condition, such as reducing intensity and any repetitive or aggressive movements of the damaged joints.

It takes conscious effort not to exploit hypermobility. Stabilization is the primary focus. Attempting to limit excessive movements in hypermobile joints is more challenging than increasing movement in the less mobile ones. This can be considered the practice of Asteya.

“Bones approximate, muscles extend”⁶ B.K.S. Iyengar

“Reach, stretch, lengthen, extend!” These are popular prompts that yoga teachers use to encourage students to deepen their postures. On the surface, these instructions seem straightforward and make sense. Upon closer inspection, however, they are often contrary to body mechanics.

Extending the arms and legs outward causes the joints to “micro” separate. Although, this increases mobility, it shifts weight-bearing responsibilities from the bones onto the soft tissues that support the joints. Tendons, designed to anchor muscle to bone, become overstretched. Ligaments can tear or rupture. Neither tendons nor ligaments can be safely overstretched. Once overstretched, tendons lose their efficiency in transferring muscle power. Ligaments become loose and cannot provide stabilization. These changes are permanent. They do not restore once the tissues heal. Repetitive overextending and overstressing are a basic cause of joint degeneration and osteoarthritis.

The skeleton is analogous to the framework of a house. Both structures provide internal support and stability. Just as the sheetrock walls do not support the house, similarly, the body's soft structural tissues - muscles, fascia, ligaments, or the tendons, are not designed for weight bearing support in the human body.



To apply this concept to asana practice, muscularly and energetically glide (retract) the bones into their joints and toward the body's central axis. Once the posture is securely supported on the skeleton, the muscular tension that was used to pull the bones inward softens and releases outward, allowing the major muscles to lengthen toward the periphery. This is the principle as instructed by B.K.S. Iyengar.

The most efficient and safest way to either stretch or contract muscles is to engage from the muscle bellies, not from the tendons and ligaments. Muscles provide power. Bones provide structural stability. Tendons transfer the power of the muscle across the bones. Ligaments assist the joints in whichever is needed - flexibility or stability. (See Chapter 8 for more details on ligament anatomy and function)

Retracting the bones into their joints and toward the core is effective rehabilitation for inflamed tendons (tendonitis). "Hugging" the muscles to the bones, as if wrapping the region fully in a swaddle, reduces strain on the muscles and fascia. "Hugging" provides a safeguard when heavy lifting. It also increases mechanical and electrical stimulation to bone tissue to increase its density and prevent bone loss.

Para-physiological space

Most skeletal joints are *synovial joints*. The space between the joints, called the *para-physiological space*, allows synovial fluid to lubricate the joint surfaces and reduce friction, particularly when the joints are in motion. This tiny space and its fluid are fully encapsulated, creating a pressurized chamber that helps support the weight of the body and respond to the many the compressive forces it manages.

Confusion may arise with this concept and the previous instruction to retract into the joints. Muscularly retracting the bones stabilizes and pressurizes the joints without producing excessive compression.

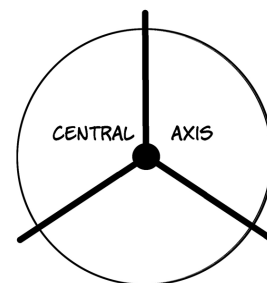
Excessive compression can damage the joints. For example: repetitively jumping back to a straight-arm Plank Pose instead of **Chaturanga**, with bent arms that absorb the shock, will be excessive.

Maintaining *para-physiological space* in the shoulders and hips is especially important to avoid damage to the *labrum*, the cartilage collars or gaskets that surround the joints. A healthy joint naturally has its required space not to damage the labrum but with excessive compression, especially when combined with rotation, tears can occur. Joint retraction also strengthens the small, joint-stabilizing muscles. They either soften or assist the larger muscles as they lengthen or contract from their fleshy bellies and outward toward the periphery.

Central axis of a joint

Joints function most safely and with full ranges of motion when centered and aligned precisely on their individual central axes. They will be most stable and can best handle weight-bearing forces.

The central axis can range in size from pinpoint size, as in the hips, to between 1-2 inches, as with the shoulder joints.



Stretching tips

- Short muscles have more strength and are more efficient than longer muscles but sacrifice greater range and flexibility. For example, the masseter muscles of the jaw, the shortest and most powerful muscles in the body, have very limited range and flexibility.
- To increase strength, an injured, aged, or weakened muscle will shorten. This causes it to become less flexible, reducing its range of motion. From a survival point of view, reduced flexibility is worth the tradeoff for more strength. (See Chapter 9 for details on stretching and muscle physiology)
- Muscles that attach to the concavity of a curve will be shorter, stronger, and less flexible. Muscles along the convexity lengthen and weaken. This can be best observed in Scoliosis, a condition that displays excessive lateral curvature. (More details in Chapter 24)
- Initiate stretching from the thick, fleshy bellies of the muscles, continuing toward the tendon attachments at the joints. Do not initiate stretching from the tendons.
- Contraction also occurs at the muscle belly. The massive muscle belly transfers its power to the tendon to move the joint. If the tendon initiates contraction, the force can tear the tendon at its bony attachment, especially if the contraction is quick or overly forceful.
- Stretching (lengthening) a muscle while it is contracting is referred to as eccentric contraction. At first it might seem counter-intuitive to open a joint angle while contracting the muscles but it is safe and used throughout asana and therapeutically in rehabilitation.
- Move from the core; teach from the core.

The quality of Samasthiti

Equal standing, Balanced stillness

From the Sanskrit:

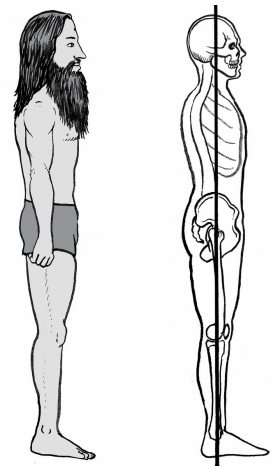
- Sama: Same, upright, straight
- Sthiti: Stillness, steadiness, standing

In the Astāñga Yoga tradition, *Samasthiti* is used interchangeably with **Tadāsana**, the Mountain pose. The term embodies an even greater use.

Samasthiti is the characteristic or quality of asana when it demonstrates equilibrium and balance. It is achieved when all muscular and energetic tension and tone are equalized, along every corresponding body surface and in every direction, right down to the outer edges of each nail bed.

The actual length of muscles and other tissues need not be equal, and rarely is. Samasthiti is achieved in the quality of their **tone** and **tension**.

Samasthiti is an important goal and a bellwether in every asana that signifies its grace and safety. It plays an essential role for those students who have scoliosis.



Alignment through the Coronal Central Axis

Samasthiti – beyond balance

Although it is generally assumed that the human structure is balanced, asymmetry and disproportions are numerous. Right or left-handedness alone creates many imbalances throughout the body. Applying Samasthiti wherever imbalances are found can greatly improve the safety and performance of asana.

A few examples:

- The musculature of the chest and anterior shoulders are approximately 30% stronger than their opposing muscles on the back body. The shoulders joints are also approximately 30% more flexible in movements on the front body as compared to movements that extend toward the back. This corresponds with human lifestyle activities being predominantly on the front body. But unless the upper back muscles remain strong, the spine will round. Over time, degenerative changes set in. To remedy the imbalance and strengthen the upper back, move the upper extremities from the muscles of the back and not the powerful chest. Details are explored in Chapter 31 and others.
- The calf muscles are 30-40% stronger than the thin musculature of the front and sides of the shin. Calf strength increases when the feet are pointed. Instead, press through the heels inferiorly, not the toes, to strengthen the front and side muscles. Engage “Neutral or yoga” feet in most asana, weight-bearing or not, by pressing inferiorly through the inner heels and lifting the lateral toes.
- Knowledgeable weightlifters not only develop their chest muscles but also balance their routine with Rows, Reverse Fly, and Pull-downs for back muscle strength. This too, is Samasthiti.

Do you practice like a Bear or a Monkey?

The 30% domination of the front-body in our life activities has the character of using our upper body in a bear hug fashion. In contrast, a monkey swinging through the treetops utilizes the strength of its upper back musculature, particularly its powerful latissimus dorsi (the rhomboids are only marginally developed). To find Samasthiti, consider practicing yoga monkey-like instead of bear-like by moving from the upper back. Learning to move the arms from the back, lifting from the under- armpit muscles, is practice-changing.

Moving with Samasthiti

Samasthiti is experienced by moving a joint with balanced tension from every opposing direction. Controlled, precise movements are performed the way one would carry a full pot of boiling water safely across a room, not wanting to tilt, wobble, or spill. Practice this quality of Samasthiti in balancing poses, such as Tree Pose, **Vrksāsana**.

As an example of lack of Samasthiti, a frequent instruction for shoulder alignment is to glide them posterior in a simple, single motion. However, the outer aspect of the shoulder moves farther and faster than the inner. As a result, the humeral head rolls anterior and externally rotates. An anterior humeral head is vulnerable to injury. External rotation restricts flexibility. Instead, glide the shoulder posterior from the inner aspect of the humeral head, using the muscles that form the inner armpit wall. Once this action is initiated, apply matching effort to the outer shoulder.



Examples where Samasthiti is improperly, not applied with undesirable results:

- A yogini lifts or kicks up into handstand from her more agile and habitual side but never practices lifting from the opposite, more challenging leg.
- A flexible, but less strong yogi exploits his flexibility by quickly deepening into an asana's final form before establishing a strong and stable foundation.
- A yogi can easily transition from pose to pose in a vinyasa but is unable to hold postures for long periods. Will he modify his practice to develop the strength to hold poses longer or does he only practice fast-flowing flows that let him skip over the required strength?
- A flexible yogini can open her hips in forward flexion and extension as in **Hanumanāsana** (Full Closed Hip Split), but cannot externally rotate the hips to stack the knee over the ankle as in **Agnistambhāsana** (Fire Logs Pose). Will she address her limitations by practicing hip rotation asana or will she avoid them and continue to only exploit the flexion/extension postures?



Hanumanāsana



Agnistambhāsana

Identifying strengths and weaknesses

Yoga practice can strip away our facades, revealing both our strengths and weaknesses.

“Always put your best foot forward!” is a familiar proclamation rarely questioned. It seems natural to take advantage of personal strengths to be successful. This misstep, however may account for many injuries occurring in both yoga and sports and the reason some athletes fail to reach their potential. From a yogic point of view, over-dependence and exploitation of strengths over weaknesses does not support a balanced system. By exploiting our existing skills and achievements, our less developed capacities lose their opportunity to progress. This “stealing” of potential violates the principle of Asteya.

Yoga is best practiced by humbly identifying the nature of our weaknesses, limitations, and challenges. If we initiate asana from our more recalcitrant areas and remove any obstacles to their development, our overall yoga practice will improve greatly. Samasthiti can be re-established in the body.

If we can let go of the urge to reach for the highest bar prematurely at any cost, identify our limitations without judgment, and focus solely on their resolution, our personal journey becomes one of grace.

As with a traveling train, it is not the fastest car but the slowest that determines the quality and pace of the trip. Increasing the power or efficiency of the engine cannot overcome the inherent restrictions caused by a rear car that has a rusted axle or broken bearing.



Heyam Dukham Anagamam

“The pains that are yet to come can be, and are to be, prevented.”

This Sanskrit phrase is one of the *Yoga Sutras by Patañjali*, codified almost 2200 years ago. This axiom advises that asana practice should not be the cause trauma but to be protective and preventative for injuries. This edict and the guiding principles of Yama and Niyama (described in Chapter 3) set the ground rules for the safe and integrated practice of yoga.

Alignment is not a “style” of yoga

The term “alignment-based” is often used and attempts to describe a style of yoga distinct from other approaches. However, the use of this term is misguided. Alignment is neither a unique style nor does it belong to a specific tradition. It is a fundamental tool essential in all approaches to asana practice. All asana in every tradition require a steady foundation and a precisely aligned and integrated body. The alignment principles or any specific cues used to instruct them are not reserved for a particular type of practice but apply to every form a yoga posture takes.

Students have many reasons for practicing yoga. Some wish to improve their flexibility. Others wish to increase core strength and stamina. Some yogis enjoy the physical gracefulness it helps cultivate while reducing machinations (discomforts) that can agitate a seated meditation practice. Breath capacity and control can be another valuable goal. Yoga increases blood flow and can improve organ function and body detoxification, being an invaluable approach for increasing vitality and longevity. All of these are worthy pursuits.

Yoga practice is also an opportunity to spend an hour or two each day administering a skillful form of therapy for existing injuries or to prevent potential ones. To be effective, dedication to the application of alignment in asana is required.

Certainly, students should choose any style of practice that they are drawn toward. In theory, any pose in any tradition can be performed correctly. The responsibility of studentship is to learn and develop the proper skills for an auspicious practice. A successful practice focuses on the intention applied and not in the attainment of a picture-perfect, final appearance to a pose.

The three R’s to avoid in asana: Reaching, Rounding, Rolling

These normally-occurring movements, particularly when initiating an asana, may seem natural and harmless but unfortunately, they impair body mechanics and cause injury if continued to the final pose.

- Reaching: instead, glide extremities toward core; move from the less-mobile core structures first
- Rounding: a rounded spine is less mobile, weaker, and compromises hip and shoulder mechanics
- Rolling: rolling the shoulder forward restricts mobility and can cause rotator cuff injury

The most basic and essential principles of alignment

If time is limited in a regular class setting, these basic principles can be instructed and applied. They deliver immediate refinement and safety at every level of practice. All of the following principles will be expanded upon in detail throughout the book.

1. The chest is on the front body and the shoulders on the back. The chest expands anterior. The collarbones lengthen lateral. The inner heads of arm bones glide posterior. The lateral borders of the shoulders, located at the back of the inner armpit wall, glide toward the spine.

2. The shoulders align with each other. Hips align with each other. Neither shoulder or hip lifts higher or drifts forward or back in relation to the other.

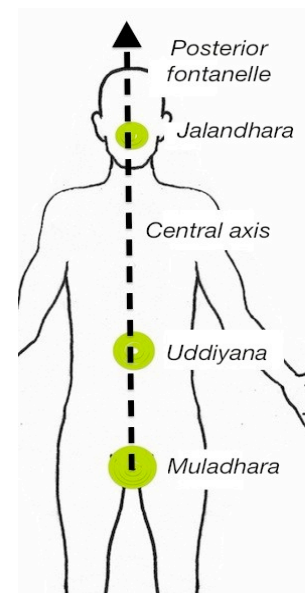
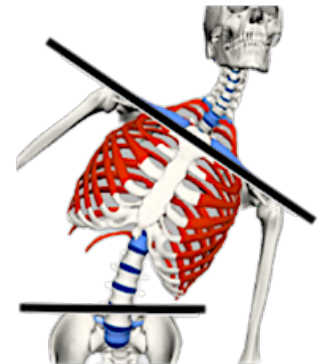
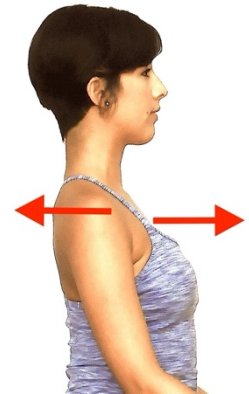
3. The arms align with the shoulders. Legs align with the hips. The arms attach to the shoulder blades on the back body and function as back-body structures. When the arms lift forward, the humeral heads glide posterior into their joints. The arms lift by pulling from the muscles below the armpits down and onto the back.

The legs align with the hip joints, the pubic bones. The femoral heads glide posterior into the hip sockets in every pose and movement.

4. Twists occur in the spine, not the shoulders or hips. Twists do not take place in the highly flexible shoulders. Twists do not offset alignment of the hips. The pelvis remains square and hips in line with each other as the spine alone twists, starting from its least mobile section.

5. Each pose has only one possible hip foundation: Open or Closed. The hips, legs, and feet square to either the front of the mat or to the side. All asana first set a clear foundation, either Open or Closed.

6. Maintain a straight and aligned Central Axis. The core of the body is its very center, from both front-to-back (sagittal plane) and side-to-side (coronal plane). The spinal curves balance along the central axis. The Bandhas and diaphragms orientate to the central axis.



When moving in or out of an asana, the body may, at times, be out of alignment. This corrects as the posture moves toward its final position. For example: when binding the arms, one shoulder might initially roll forward of the other to bind, but after that, the shoulders re-align with each other.

The final appearance of an asana does not always display perfect alignment. However, if an asana is attempted with the intention to move in the directions of correct alignment, it is well-performed.

Squaring the hips

Although not an anatomical term, “Squaring” the hips is commonly used to describe bringing each side of the pelvis in line with the other. They may face forward in Closed-hip asana or align side-to-side in Open-hip asana. They remain horizontal with each other, even when the hip orientation changes.

Summary of Chapter 5 principles of alignment and integration

- Integrative Alignment: establishes the position of each part of the body for ideal function. Every part integrates into a coordinated, unified, and functioning whole body
- Movement vs. stability are the two states being juggled by the body at all times
- Interdependence: Each body region aligns independently but remains integrated with all other parts
- **Tadāsana** (Mountain Pose) contains all alignment principles needed for all other postures
- The art of practice is to determine when to go deeper into a pose and when to back off
- Initiate movement from regions of least mobility. Start with the least mobile regions and continue until the most mobile participate
- Twists occur in the spine; not the shoulders or hips
- Hypermobility: A joint that moves beyond its designed range of motion; it is easily subject to injury
- Convex vs. concave: straight curves are more mobile but are less stable and less strong. Concave, compressed curves are less flexible but its muscles are more efficient and stronger. Curves that are too deep can compress spinal discs and nerves. Lengthen the concave curve and contract the convex side when moving from the spine
- Shorter muscles have more strength and more efficient than longer muscles, but less flexible
- Aged muscles shorten to increase their overall efficiency
- Periphery of the body moves faster than the core
- Move from the core for integrated movement
- Bones approximate, muscles extend
- The most efficient and safest way to stretch or contract a muscle is to initiate the action from the muscle belly, not from the tendon or ligaments. Continue to stretch by extending outward from the muscle belly and toward its tendon attachments
- Para-physiological space is the natural micro-space in synovial joints; it allows for joint lubrication and mobility to occur without compression
- Joints function most safely and fully when they centered and aligned along their central axis
- Eccentric contraction, stretching while contracting, is a valuable therapeutic tool
- The quality of Samasthiti: equal length, tension, and balance along every opposing body surface
- Samasthiti is established in every posture
- Strengthen and engage the upper back muscles with more intention to find Samasthiti
- The calf muscles are 30% stronger than musculature of front and side shin. Press through the inner heels and lift the outer toes to strengthen front and side shin muscles
- Practicing yoga like a swinging monkey develops stronger upper back muscles. Avoid overpowering asana from the bear-hugging chest musculature
- Control the movement of a joint from every possible direction in a balanced and integrated fashion
- Heyam Dukham Anagatam: Yoga can prevent pain and injury
- Alignment is not a “style” of yoga but fundamental to every style and tradition
- Square hips both horizontally and vertically