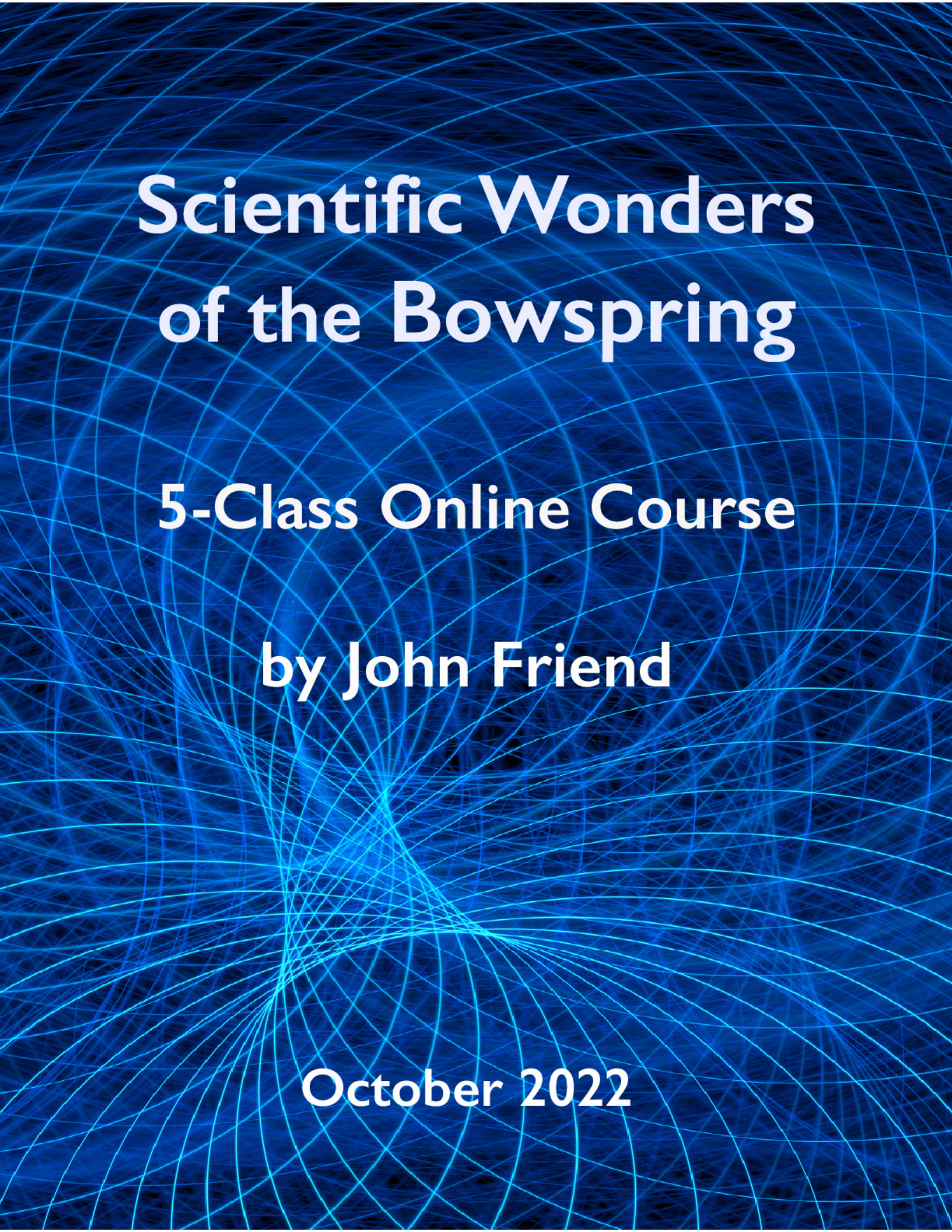




Scientific Wonders of the Bowspring

5-Class Online Course

by John Friend

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The Scientific Wonders of the Bowspring

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The Bowspring method is a leading contributor in the emergent paradigm of biomechanics which views the body, not as a solid, compressive structure requiring a vertical stacking of the skeleton for optimal standing posture, but as a biotensegrity structure that has optimal functional capacity through a wavy, curvy, dynamically springy myofascial alignment.

The foundation of the Bowspring method is based on the premise that there is a deep order within the structure of the universe. From the spiral structure of galaxies to the spiral form of molecules there is universal geometric patterning. From the macro to the micro, the geometric forms are fractal reflections of one another. The Hermetic axiom, “As above, so below” describes the holographic, fractal nature of forms across the full spectrum of scale in our universe.

In our Postmodern culture that prioritizes the subjective over the objective, and the relative over the universal, there is no standard for optimal or balanced postural alignment. In this view, all bodies are considered different and so the idea of universal alignment that can apply to all is deemed invalid. There is no agreed upon definition of ‘misalignment’ since each person can decide what postural form feels best for them. In fact, the neoliberal Postmodern view dismisses universal alignment as bigoted since it takes the supposition that wavy spinal alignment is healthier than flat, linear spinal alignment for functional movement, and so it degrades people who prefer a comfortable, rounded posture.

The Bowspring method sees the postural alignment as an expression of genetic influences, lifestyle choices, and cultural indoctrination. Although all of us have unique biomechanical limitations and unconscious postural patterning, we can all learn to move more toward universal alignments which optimize our health and functional movement capacity. Increased health benefits can be experienced through universal alignment, not necessarily by achieving a perfect position, but by moving *towards* the universal forms, by simply moving in the direction of dynamic balance.

Universal alignment within the Bowspring method focuses on dynamic functional movements and positions, not on static alignment for resting, sleeping, or inactivity. The alignment principles of the Bowspring are centered around key overarching ideas:

- Each part of the body has an intrinsic universal geometry.
- There are universal proportions or wavy, harmonious relationships between the parts in which uniform myofascial tonus around the joints of the body can have the highest potential to create a tensegrity.
- A tensegrity is a postural alignment in which the bones are harmoniously suspended by balanced, uniform myofascial tonus on all sides, particularly in the relationship between the back and the front of the body.

What makes something scientific?

- There is high predictability of cause and effect for the behavior of something.
- There is inquisitiveness, curiosity, mental rigor, and skepticism applied to what is being observed.
- There are regular, careful data-collecting from multiple observations over an extended period of time.
- The analysis of the data is performed using universal mathematical principles, logic, reason, and objectivity.
- Observation, measurement, hypothesis, and mathematical proof => key elements of the scientific method.

Paradigm Shift in the Science of Biomechanics

In the worlds of modern postural yoga, bodywork, and physical therapy today, there is an emergent model of the science of biomechanics that is revolutionizing yoga alignment. The new emergent paradigm of postural alignment refutes many of these fundamental assumptions of the standard model, including the widely held idea that the physical body is a solid, compressive structure that needs to be stacked vertically in order to most effectively resist the forces of gravity.

In the new view, good postural alignment of body is not simply seen in terms of linearity and stacking static bones into a vertical plumb line with dynamic muscular relationships between one side releasing and one side contracting. Instead, the new paradigm understands the body as a complex system of visco-elastic elements, particularly fascia, that can harmonize with all the bones of the skeleton and all muscle groups to make all joints more functional and healthier. This dynamic harmonic synchronization of all parts of structural physical anatomy in which there is a balance between compression and tension at the musculo-skeletal joints is called “**tensegrity**.”

When there is a balance between tension forces of the connective tissues drawing in toward the bones, and the compressive forces of the bones pushing out with resistance, the joints have optimal space and the body can move with relative lightness and spring. For there to be balanced tonus or tension of the connective tissue on all sides of the body or joints, then the skeletal structure needs to be in a general alignment which can be described as a wavy form instead of a linear form. It is the curvy geometry of the myofascial-skeletal system that provides the capacity to have an anti-gravity lightness and springy power in any dynamic posture or functional position.

Increasing number of experts in posture, anatomy, and biomechanics are embracing the new idea that the human body is vastly more of a visco-elastic structure than it is a solid, compressive form. With this new view of the body, a stacked upright posture is replaced with a curvy, dynamic shape in order to have improved agility, strength, and lightness. With a growing realization that the standard model alignment is obsolete (not only ineffective in the long-run, but can be harmful over time), a functional approach to alignment is emerging to challenge the myths of linear posture and static stretching.

The Bowspring method is part of an emergent paradigm of biomechanics which emphasizes activating all sides of the fascia on the body, particularly the posterior chain on the back from the bottom of the feet to the top of the head. By dropping the linear, solid view of the body and embodying a curvy, wavy, full body visco-elastic dynamic posture, the power of the new alignment technology becomes self-evident to both the practitioner and the outside observer. By applying the new science understanding of tensegrity and fascial tonus and alignment, chronic joint pains and degeneration are alleviated and functional movement becomes graceful and powerful with minimal force.

The Standard Model of Biomechanics

“Biomechanics” -- the physical principles which mathematically describe the functional movements of bodies and their postural alignments -- has been a topic of intellectual analysis for over 2300 years in the West, since Aristotle wrote a treatise on the movements of animals. Almost 1800 years later, in the 1500's, the metaphor of the body as a machine began to spread. Mechanical analogies of levers, fulcrums, and pounds per square inch of force were used to describe the solid, machine-like physical body. In the next century, as Cartesian dualism began to deeply impact scientific and philosophical thought in the West, biomechanical alignment became a completely physical analysis separate from the influences of the mind. This linear, dualistic, compressive structure view of the body has become the dominant standard model of biomechanics worldwide into the 21st century.

In this materialistic view of the body, “good posture” is commonly thought of as being upright like in the construction of a well-built building in which all the solid, compressive elements are vertically stacked to withstand any shearing forces of gravity. To determine good standing posture from the side view, the standard reference is often a vertical plum line running down through the central axis of the head, neck, torso, and legs down through the ankles. The straighter, more upright and in line with the standard reference that the body is measured, then the better the postural alignment. In the standard model, the most effective way to elongate the spine is to make it straighter. To maximize the length of the spine, the tailbone is pulled downward and the neck is extended upward so any excessive curvature is eliminated as the spine becomes more linear.

In the first half of the 20th century, the study of biomechanics was introduced in universities as an intersection between the biological and physical sciences. Courses in biomechanics, which combined knowledge of anatomy, physiology, physics, and mathematics, became much more in demand after World War I, when doctors and mechanical engineers were helping large numbers of amputees be fitted with highly functional prosthetics. In the last quarter of the 20th century courses in biomechanics expanded into kinesiology and sports science courses.

Now into the first quarter of the 21st century, postural experts and medical professionals -- doctors, physical therapists, yoga teachers, chiropractors, physical education instructors, sports trainers, etc. -- have continued to use the same standard biomechanical model to determine optimal alignment of the human body. Although scientific and medical knowledge of the body has grown tremendously in the last few decades, the fundamental assumptions of the standard model of human biomechanical alignment have remained the same since the scientific revolution over 500 years ago.

One reason the standard model of alignment has remained dominant for decades, if not for centuries, is that it doesn't challenge our static default which feels normal, right, and comfortable to the average person. Since the linear standard alignment doesn't usually hurt when initially performing it, and in fact it often feels stress-reducing, there is no immediate impetus to change. Without acute pain in the moment we will tend to not to make a concerted effort to make any lasting change in our normal posture. Our nervous system defaults toward feeling of safety and comfort, so we unconsciously move toward the default postural alignment which is reinforced by the standard model teachings and cult-like doctrine.

Standard Model of Biomechanics

vs.

Bowspring

- The body is a physical machine.
- The body is separate from the mind.
- The body is a solid compressive structure.
- Good posture for standing or sitting is a vertical spine.
- Optimal alignment is viewed as a position of static neutral.
- The postural alignment that uses the least amount of effort for any given position is optimal.
- Biomechanics is best understood by analyzing individual parts of the body.
- Muscles are more important than fascia.
- The most effective way to elongate the spine is to make it straighter. To maximize the length of the spine, the tailbone should be pulled downward and the neck should be extended upward.
- Degree of flexibility is more important than postural alignment.
- Swayback or overarching is the main cause of lower back pain.
- Flexibility is a function of relaxation, and reciprocal contraction.
- The body is an integrated system of physical, psycho-emotional, and spiritual energies.
- The body is a viscous, elastic myo-fascial-skeletal living form of tensegrity.
- Good posture for standing or sitting is a wavy spine in which the pelvic floor is level and the hips are behind the ribcage.
- Optimal alignment is viewed as a position of dynamic neutral.
- The postural alignment that has uniform tone on all sides with full extension of the spine with the least amount of effort is optimal.
- Biomechanics is best understood in terms of a systems approach to the individual parts.
- Fascial alignment in terms of shape, tone and directionality is prioritized over muscular alignment.
- The most effective way to elongate the spine is to make it wavy. To maximize the length of the spine, the hips root down while extending upward through the top of the head, maintaining the ribcage fully expanded and the double-S shape of the back of the body.
- The postural alignment in terms of shape, uniform tonus and directionality of the myo-fascia is more important than degree of flexibility.
- The main cause of lower back pain is a flattening or rounding of the spine.
- Long-lasting flexibility and agility is a function of uniform myofascial tonus within a tensegrity. Eccentric stretching is most effective.

The Trouble with Paradigm Shifts

Although the new biomechanics model of the body as a visco-elastic biotensegrity can lead to healing of chronic injuries, prevention of joint degeneration, powerfully propulsive anti-gravity functional movement, and an overall expansion of life force, resulting in radiant mind-body health, the static, linear standard model will not relinquish to embrace the new paradigm without a fight!

New paradigms always appear to go through a universal cycle of 4 stages of mainstream cultural resistance -- initial public denial and then wide open acceptance.

1. At first, the new paradigm is ignored as just another weird idea expected to be shown to be ineffective and possibly harmful.
2. When the new paradigm starts to pick up a few advocates in different communities, then the establishment, who protects the standard model -- the official view, will start to push back with public dismissal.
3. When the new paradigm becomes louder in showing that the old model is not the optimal way any longer, then the mainstream zealots attack with ridicule and ad hominem slander against the free thinkers on social media.
4. Then there is a quantum shift, a jump in the zeitgeist, a reality reset and the mainstream says that the new paradigm is really what they had been doing for quite awhile now and everyone else just caught up with them in their innovations!

The resistance to the emergent paradigm of biomechanics that emphasizes a wavy, curvy, uniform myofascia eccentric tonus to create a dynamic postural tensegrity will be strong and challenging for 3 main reasons:

1. Cognitive Dissonance -- The classic standard model has completely infiltrated all educational institutions, particularly medical schools, so the emergent paradigm will be inevitably attacked as heretical and unscientific.
2. The tensegrity of the Bowspring or a somatically open dynamic posture allows for feeling oneself in a deeper way, which can be perceived as psycho-emotionally uncomfortable.
3. The Bowspring is the opposite of unconscious default C-curve, closed position, so the nervous system must be retrained, which is humbling and takes disciplined practice over time.

Scientism is Not Scientific

Today Scientism, which prevades mainstream culture and has infiltrated academia and global governments, is a religious belief system, not a science. In Postmodern Scientism, critical thinking is discouraged. Whatever the authorized experts, the official State scientists says is true, is the 'science'. Conformity to the official view is maintained with a cult-like fervor. If the mainstream 'experts' declare that the standard model is correct, then any dissenting views or those questioning the model are deemed "unscientific" and heretical. Dissenting views are censored and personally attacked. To challenge the standard model of alignment is unpopular, and so most yoga teachers don't typically investigate the new paradigm because it could lead to a disruption in their careers and livelihoods if they were to adopt any of the antithetical alignments into their teachings.

Bio-Tensegrity of Fascia and Bones

For centuries, the connective tissue that surrounds all of the bones, muscles, organs, glands, nerves, and brain has been considered of low importance to the overall health of the body. Until recently, fascia has been thought of as merely a fleshy insulation and a fatty filler of the spaces between organs, glands and vessels. This determination of the lower value of fascia compared to the other parts of the body, particularly the muscles and bones, myopically arose from dissecting the body into small parts without seeing that every part of the whole is integral. Our methods of using corpses or bodies at rest as the primary way to observe and measure the natural alignment and physical structure of the human body has until now, vastly overlooked the importance of fascia in the biomechanics of functional movement.

Old ideas of posture, which center around stacking bones and elongating lines of muscle, are crumbling in the face of our new understanding of the springy, fluid power of curvy fascia. One of the biggest shifts in our current biomechanical understanding of the body is due to the emerging science of fascia -- seeing the body as a viscous, springy matrix of spirally connective tissues which runs up and down the length of the body in self-organized patterns. It is seen now as a netting composed of strands of spirally collagen, which can give global tension to all sides of the body like a 'muscle suit'. So, instead of our bones holding us up, it is the dynamic tonus of our connective tissue, primarily the fascia, which pulls and holds up the skeleton! The bones are effectively spacers, which push out against a continual pulling net of myofascia. The result of this dynamic push and pull relationship between the bones and myofascia makes the body a 'tensegrity structure'.

Tensegrity is an engineering term coined by Buckminster Fuller to describe balanced tension forces of push and pull within a structure, in which discontinuous compressive elements like bones can be suspended through continuous tension elements like fascia. Tensegrity forces are omnidirectional, stable in any direction, and independent of gravity. When the tensions of the myofascia are balanced on all sides of the body and around the joints, the bones effectively float and the whole body is light and agile. It doesn't matter if the person is standing, sitting, on all-fours, lying down prone, supine, under water or in 0-gravity space. When external forces are applied to the tensegrity system -- like hitting the firm ground when running, they are dissipated or spread through the whole body instead of being focused on a few joints or weak links. The connective tissue becomes a major shock absorber in a bio-tensegrity when optimally aligned with wavy, uniform tonus on all sides of the body.

Bio-tensegrity explains how all animals move gracefully on relatively small toes and thin legs compared to the size of the rest of their body. Large, weighty animals like horses, tigers, or elephants have a horizontal spinal alignment when they walk, run or are at rest. This is not a structural problem for any animal since the balanced tonus of their connective tissue with their skeletal alignment gives them tremendous lightness, agility, and strength. Animals naturally align their ribcages, head and tails so they can engage all sides of their myofascia in a balanced way for light, springy movement. They don't need to stack their bones vertically to counter gravity!

Bio-tensegrity of the human body, particularly in the most common functional movements -- standing up from a sitting position, walking, or bending forward to pick something up -- is created through wavy alignment of the spine and balanced engagement of the other key subsystems of the body -- the Wings (hands, arms, and shoulders) and the Roots (feet, legs, and hips).

The outer shape or geometry of the body -- in its various proportional relationship between curvy segments of the body like the ribcage, hips and head -- sets the boundaries on the capacity for physical functionality. Optimal functional movement arises from a specific harmonic wavy, pulsing alignment, not from a linear, static, heavy posture. With a smooth, wavy form on the back -- back of the head, neck, upper back, lower back, and hips (double-S curve) -- the myofascia can be evenly engaged on both the back and the front of the body, creating a tensegrity.

When the outer body is aligned toward straight lines, then the tonus of the myofascia is not balanced between the front and the back of the body. When the spine is straight or rounding toward a C-curve, then the myofascia of the back disengages in relationship to the contracting of the front of the body. In other words, in a more linear postural alignment, the front chain of myofascia is short and tight, and the back chain is weak and stretching passively. Consequently, the capacity for the posterior chain of myofascia to lift the body up diminishes and the whole body becomes heavier and less agile. Yet, the standard model of postural alignment today continues to emphasize linear, straight and upright posture.

In the Bowspring, we embody a wavy, harmonically proportioned alignment between the roundedness and curvy hollows of the back of the head, neck, upper back, lower back, and hips along the central channel of the body. In this way, we are able to create a uniform tone of the connective tissue on all sides, up and down the body, which is balanced with dynamic, pulsing extension out from the core of the body. It is through the pulsing relationship between inner expansion and outer engagement that the central core of the body can extend to its fullest capacity. A balance of an inner push of the ribcage / the skeleton with a uniform toned engagement of the myofascia around the bones creates a tensegrity of the body.

Through wavy alignment, we can use the minimum amount of effort to create a balance of pulsing forces of contraction and expansion, pulling and pushing, and rooting and rising that provide for maximum lightness, buoyancy, agility and propulsive power in all movements. Again, the bones do not hold the body up!

Our structural human design is not inferior to an animal. Humans are an evolved, complex form of an animal species and our natural alignment is not a mistake nor a poor design. Our chronic joint pain, accelerated physical degeneration, heart disease, cancer, drug addiction and general suffering among humans is self-created. The common physical problems of humans aren't because of a bad design in Nature. Instead they derive from ignorance and lack of knowledge of biomechanical alignment, poor postural habits, and highly neurotic and psychotic imbalances that have developed within human culture particularly over the last few centuries. Once the body is understood not to be a solid, compressive structure in which the bones hold up the connective tissue, the 'scientific' foundation on which the standard model of postural alignment is based falls apart.

Professional fascia experts like Dr. Robert Schleip, Thomas Myers, Gil Hedley, Carla Stecko, and many other current researchers are scientifically showing how postural alignment and functional movement is enhanced by balancing tensile strength and malleability of myofascia. In the new paradigm of alignment, their work is helping to legitimize worldwide the tremendous importance of balanced fascia for healthy posture.

3 Main Traits of a Postural Tensegrity

1. Balanced Form

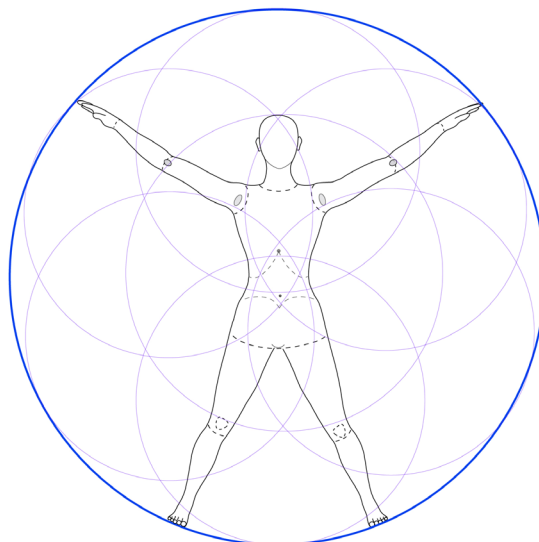
- Each of the 10 Key Areas of the body are approximately in their dynamic neutral position.
- Each part of the body is in a balanced position in relationship with the other parts.
- The back of the body -- back of the head, neck, upper back, lower back, and hips -- has a wavy, double-S curve.

2. Balanced Tonus

- The myofascial tonus on all sides of the body -- front and back, right and left, arms and legs -- is approximately uniform and balanced.
- No one part of the body -- muscles or fascia -- is over-working or under-working.
- No part of hyper-extending nor hyper-contracting.

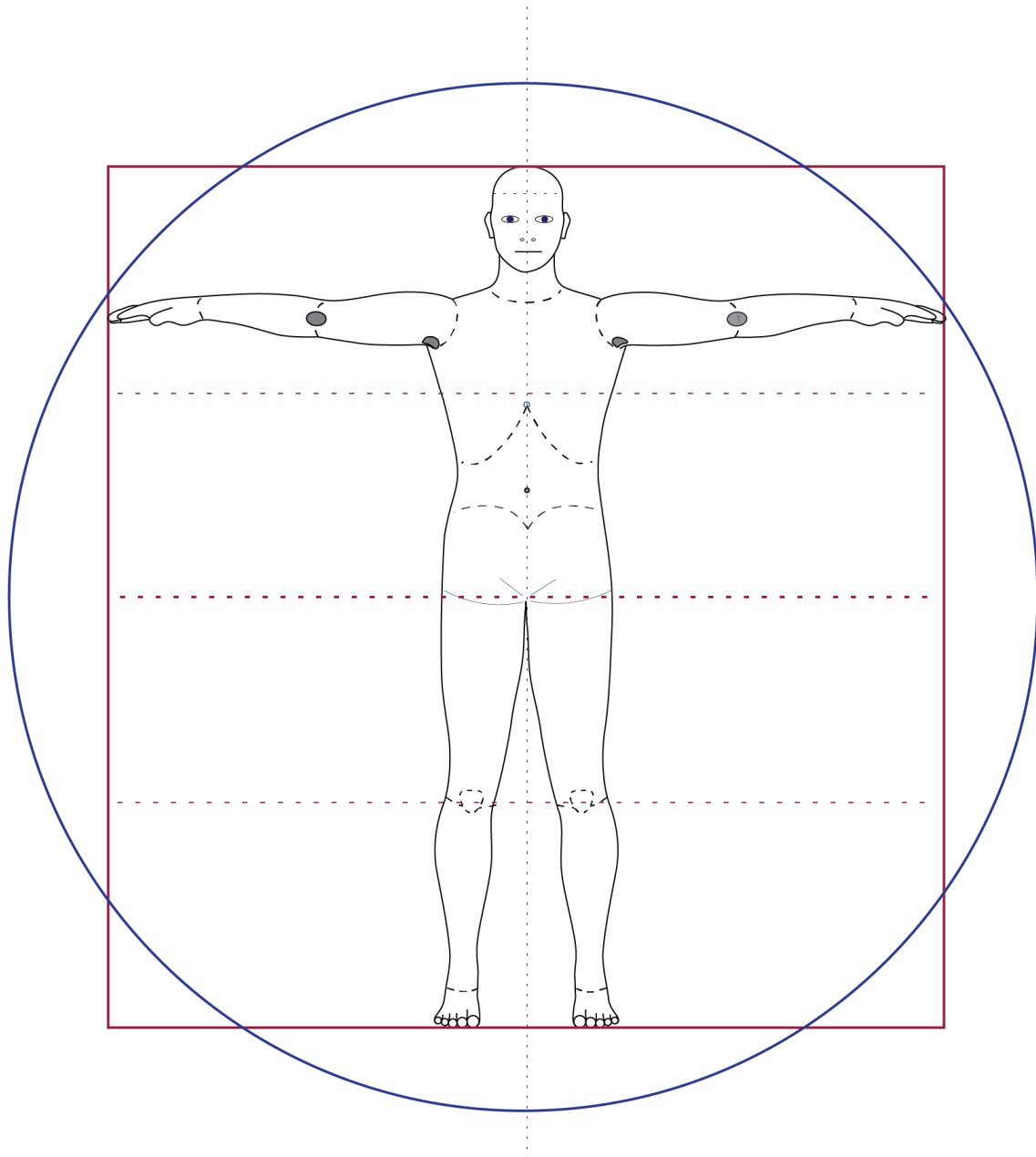
3. Balanced Directionality of Action

- Each Key Area has a balance of myofascial tonus connected from periphery toward the core of the body with an extension of energy from the core to the periphery.
- The rooting, downward action is balanced with the rising, upward extension of the central channel of the body.
- Downward thrust is balanced with upward propulsion.
- The push energy of the bones is balanced with the pull energy of the myofascia.

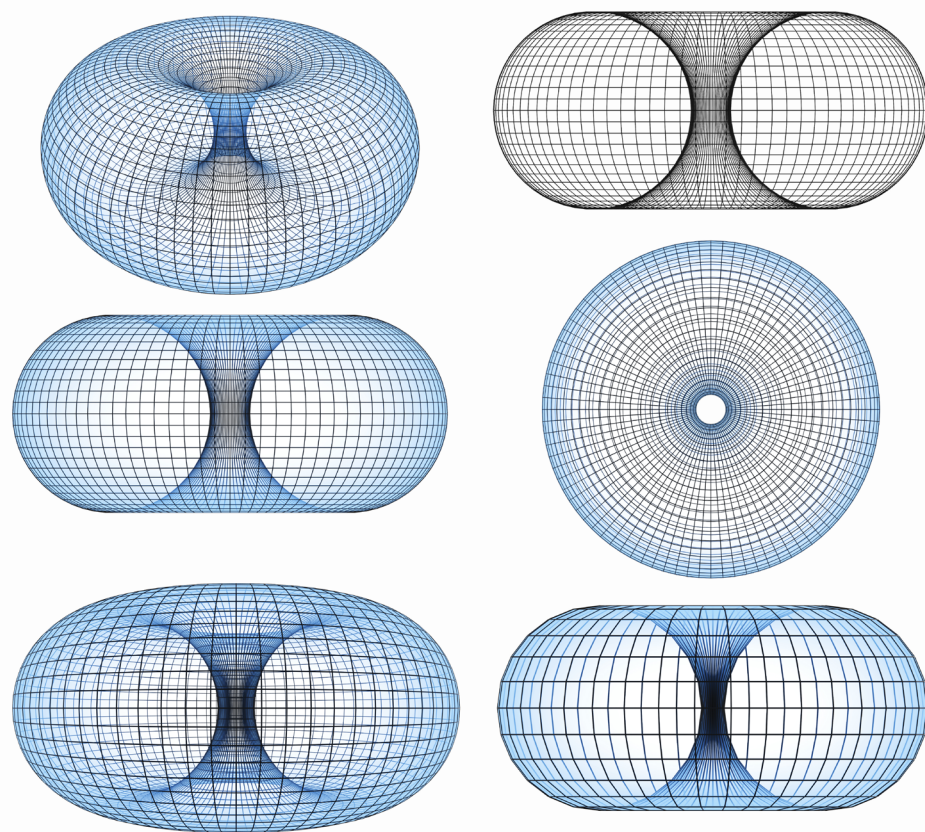


Universal Alignment of Dynamic Symmetry

Each of the 10 Key Areas of the body has a universal alignment which provides for uniform myofascial tonus and optimal functional movement. Every body is different and yet can move toward balanced form and alignment, which is universal. The area of the square can only approximate the area of the circle; the finite can only approximately represent and allude to the infinite. Scientific methodologies and technological systems are ultimately limited in reflecting Nature and the unlimited creative processes of Spirit. Yet, although our Bowspring method is limited in its ability to balance everyone's alignment to create postural tensegrity, it is more effective than the standard model alignment which leads to imbalance in myofascial tonus on the front and back of the body. Not all alignment is healthy; not all alignment systems create postural tensegrity and optimal functional movement.



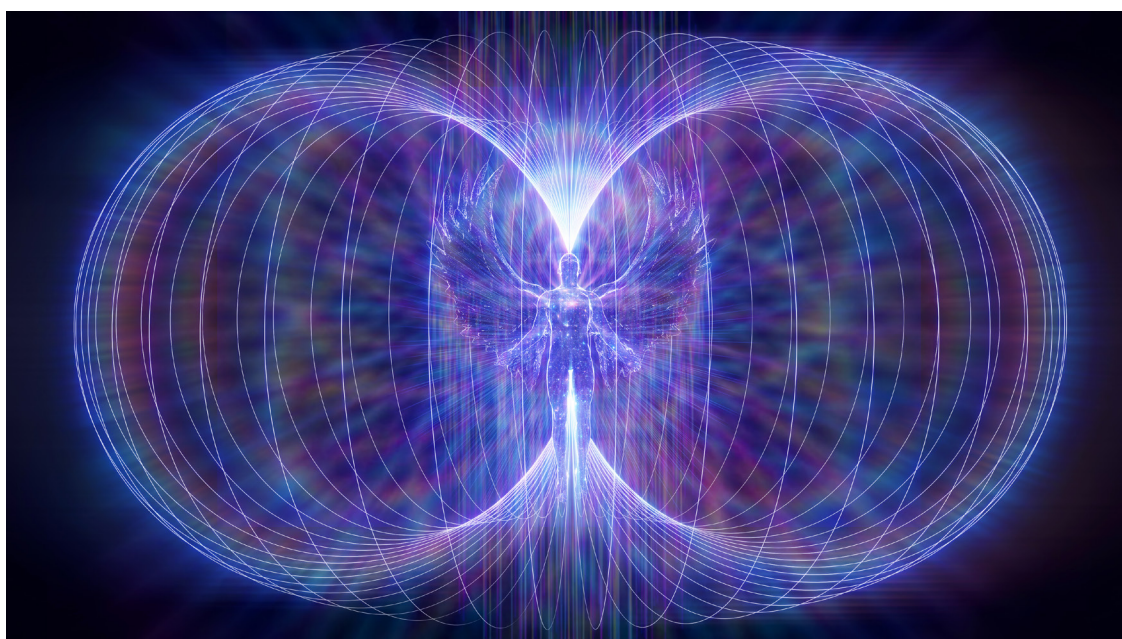
Balanced form in the body, which leads to postural tensegrity, is fundamentally derived from the universal template of its torus-shaped electro-magnetic field. The flowing field is polarized, primarily along the y-axis or the central channel of toroidal field. The human spine reflects this polarization from the tailbone to the top of the neck. The central channel of the body flows from the bottom of the pelvis / pelvic floor up to the top of the head and recirculates to the periphery of the body - skin, fingertips and toetips. The polarization transforms an infinite field of Ether (Akasha) into a spinning toroidal finite field that manifests in 3 dimensions (x,y,z) of bilateral symmetry—right and left; up and down; and back and front—as a finite physical body.



The Torus

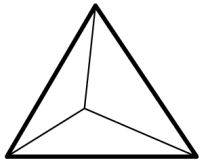
-- Nature's universal form

Spinning, polarized field transforming the Infinite into the finite; manifesting Spirit into matter; Consciousness becoming a corruptable, unconscious physical body.

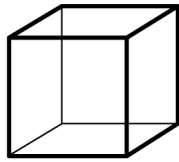


The 5 Platonic Solids

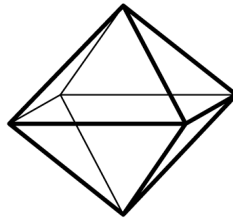
From the toroidal field, standing waves of vibration take form with universal, mathematical organization. The most basic forms in Nature are the Platonic Solids with the tetrahedron as the most elementary for structural integrity of physical form. All five convex regular polyhedrons demonstrate faces, edges and angles that are congruent, that is, all faces are equilateral, all angles are the same and all the edges are identical.



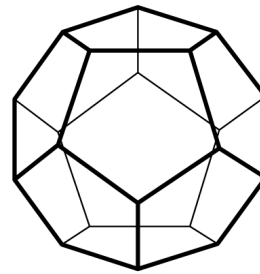
Tetrahedron



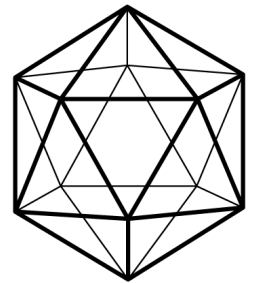
Cube



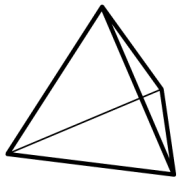
Octahedron



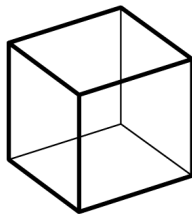
Dodecahedron



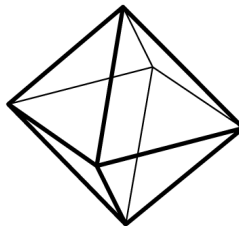
Icosahedron



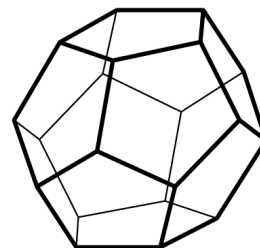
4 sides



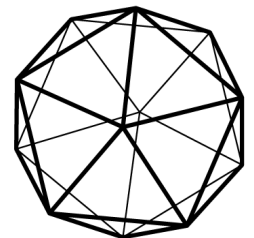
6 sides



8 sides



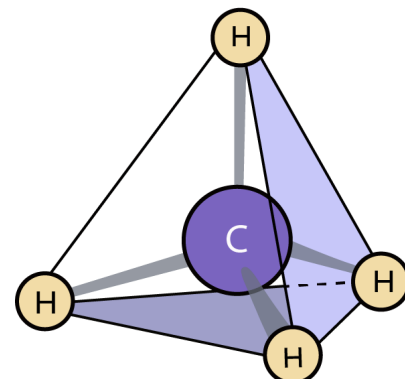
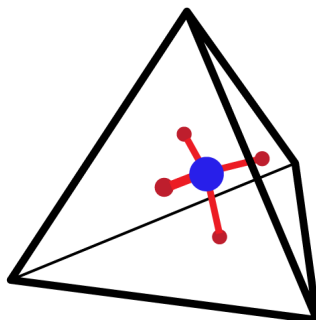
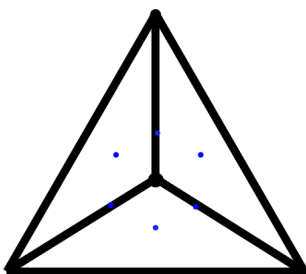
12 sides



20 sides

Tetrahedrons

A perfect triangular 3-dimensional structure is the tetrahedron. It is 4 equilateral triangles in perfect balance with each other so the structure is incredibly strong and resilient. The centerpoint of the tetrahedron is equidistant to the center points of each of the 4 faces. The simplest tensegrities have tetrahedral structures.



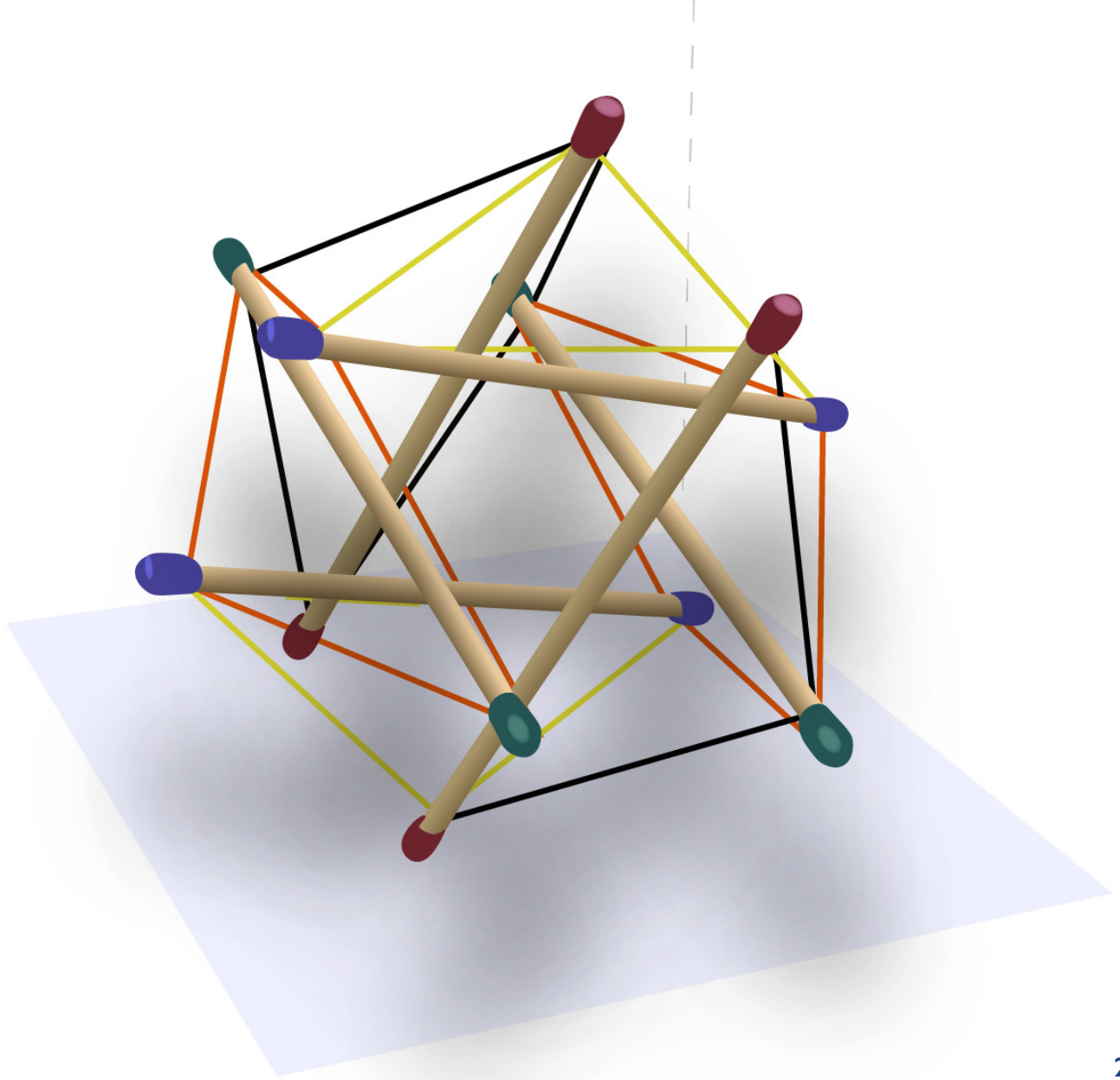
Methane Molecule

Icosahedral Tensegrity Structure

A basic tensegrity structure can be created with 6 struts of equal length connected by 24 elastic strings.

The struts are organized in 3 parallel pairs, 90-degrees from the other struts. Each strut has a X,Y,Z coordinate in 3-dimension -- right/left (X), up/down (Y), and forward/backward (Z). The universal geometry of the human skeleton also has struts -- bones that are designed to float in a uniform tone of myofascia -- that run right/left (spinal facet joints, collarbones, pelvic bones), up/down (spinal processes, armbones, leg bones), and forward/back (ribcage, pelvic bones, skull, spinal vertebrae, and the hands and feet). In this model, the tension lines connecting the bones run at 60-degrees to each strut, so the balanced forces are tetrahedral in structure.

Triangulation and criss-crossing of connective tissue from one part of the body to another is Nature's most common structural design since it give tensile strength across entire joints and ultimately, the whole body.



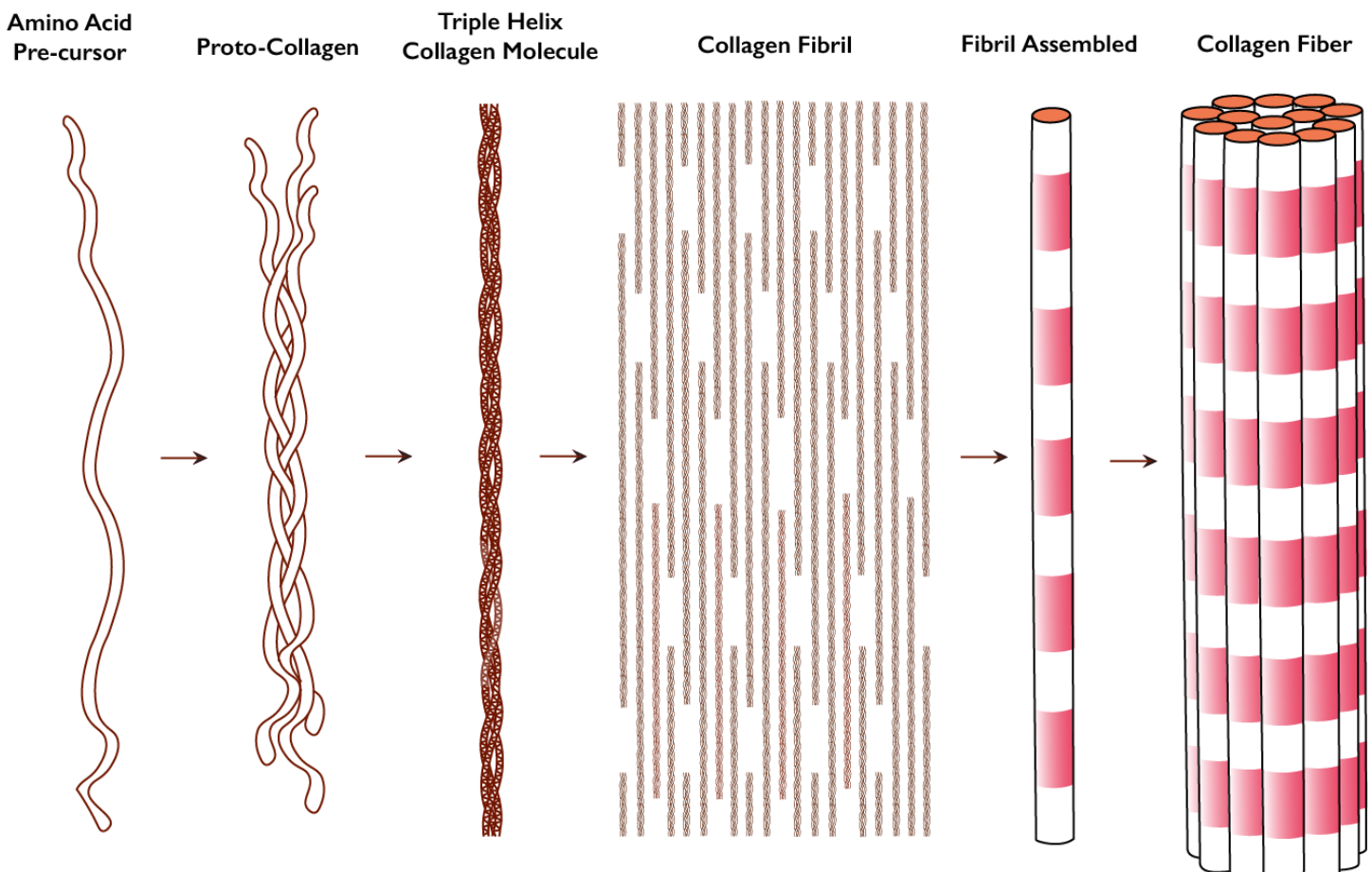
Self-Organizing Collagen

The spirally fibers of our visco-elastic myofascia flow in an orderly design around all bones in the body, particularly in longitudinal patterning -- running the length of the body from the head to the toes, which is along the central channel of the toroidal field.

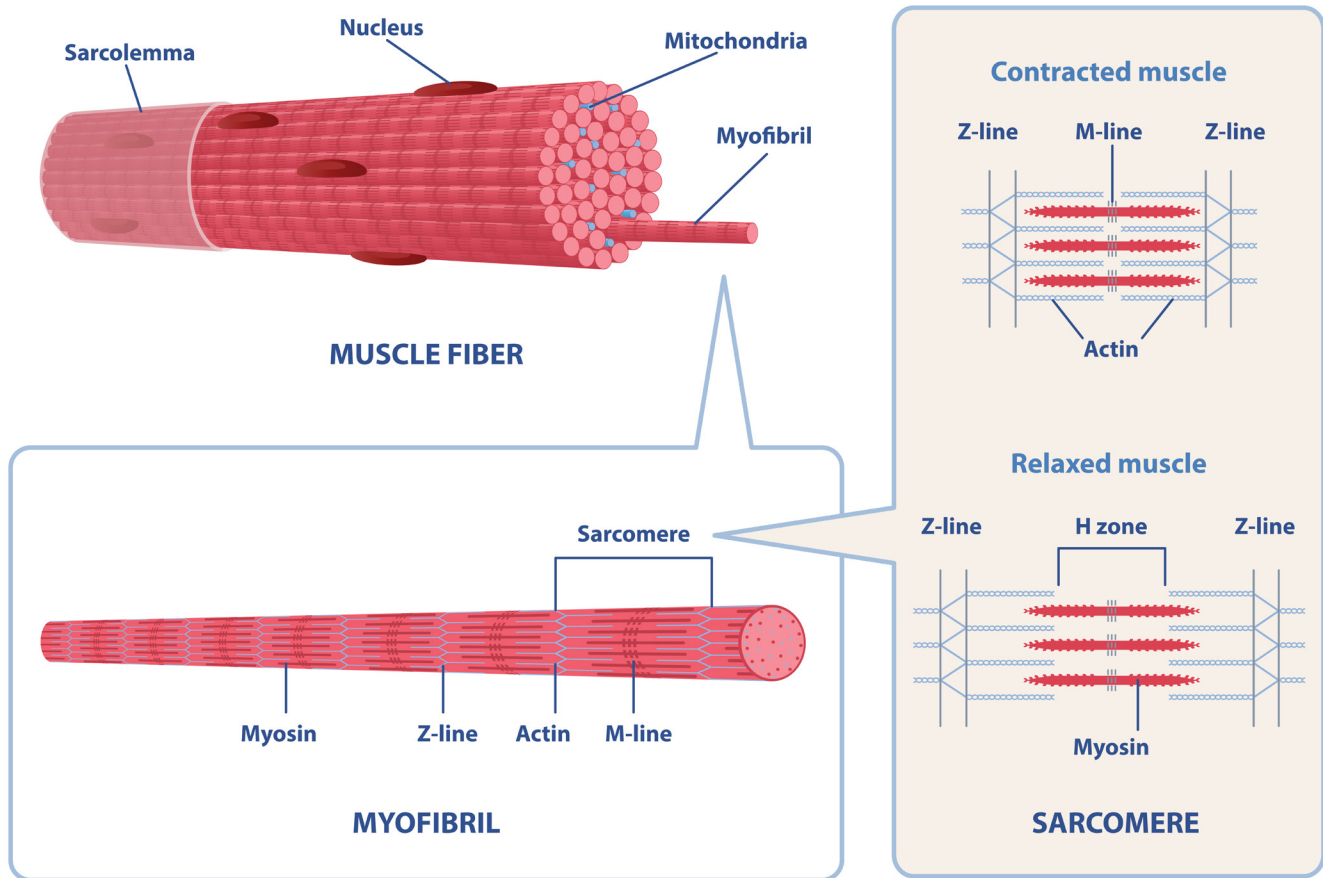
The triple helix collagen molecule self-organizes its strands into tightly bonded fractalized fiber bundles. Our fascial connective tissue is composed of 80% water, yet the triple spiral interweaving of the molecule has a tensile strength greater than steel.

When there is uniform tonus around a joint in tensegrity, wear and strain are minimized while mobility and structural strength are maximized.

- A tensegrity of balanced push and pull forces between the compressive elements of the bones and tension elements of the myofascia, derived from a universal wavy alignment in each part, gives us the capacity for optimal functional movement with propulsive power and fluid agility.



STRUCTURES OF THE MUSCLE



Muscles are composed of myofibrils of interwoven sacromeres of spirally actin molecules and branching myosin molecules.

Contraction and relaxation of a muscle does not necessitate reduction in flexibility during contraction, nor increase in flexibility or relaxation during stretching. In fact, the mysosin and actin molecules within a sacromere do not change their length during muscle contraction or relaxation. Therefore, technically muscles don't stretch! They open up and gain length by relaxing, which occurs when the nervous system feels safe or is resting.

Uniform tonus of the fascia around a muscle also signals safety and stability to the nervous system so the brain can send back signals to open somatically -- both in the myofascia and at a psycho-emotional level.

The 10 Key Areas of the Body

The human body is an integrated system of conscious energy in that each part effects every other part. Each key area of the body has an intrinsically balanced alignment in which uniform myofascial tonus can be engaged on all sides in order to create a postural tensegrity. The primary key area is the heart -- the center of the central channel -- the ribcage. Consequently, the primary curve of the spine is the 12 vertebrae of the thoracic spine, which need to be first fully inflated and extended first in order to effectively align the other key areas into the tensegrity of the Bowspring.

Apples & Apple-Cores

Wings & Roots

10. Head

Crown

9. Neck

Apple-Cores

1. Ribcage

Center

8. Waist

Apple-Cores

7. Hips

Roots

4. Shoulders

Wings

3. Arms

Wings

2. Hands

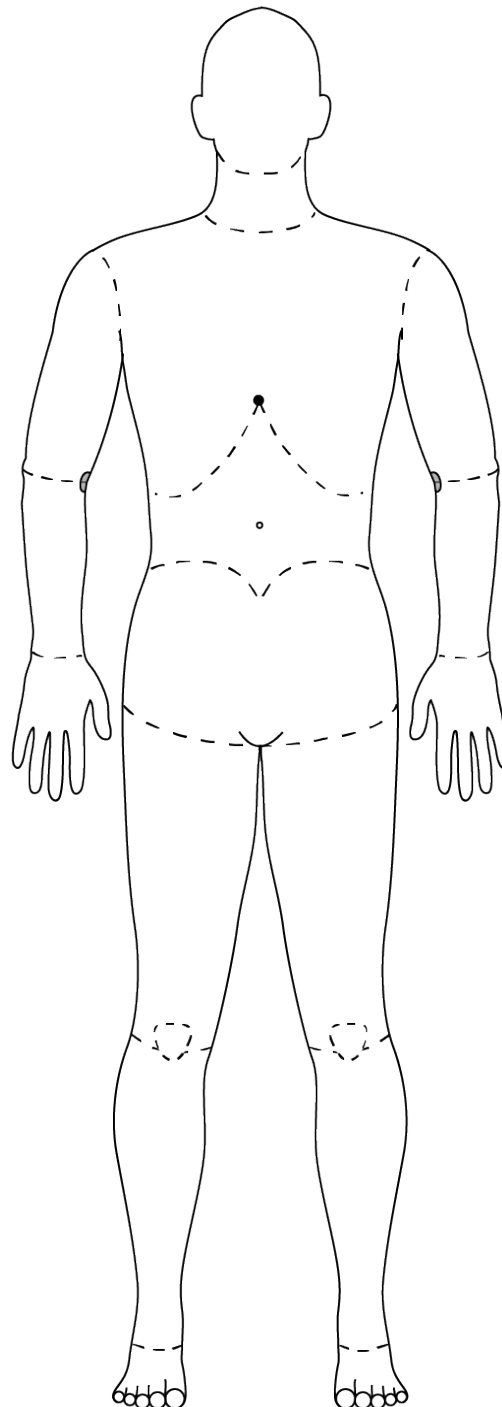
Wings

6. Legs

Roots

5. Feet

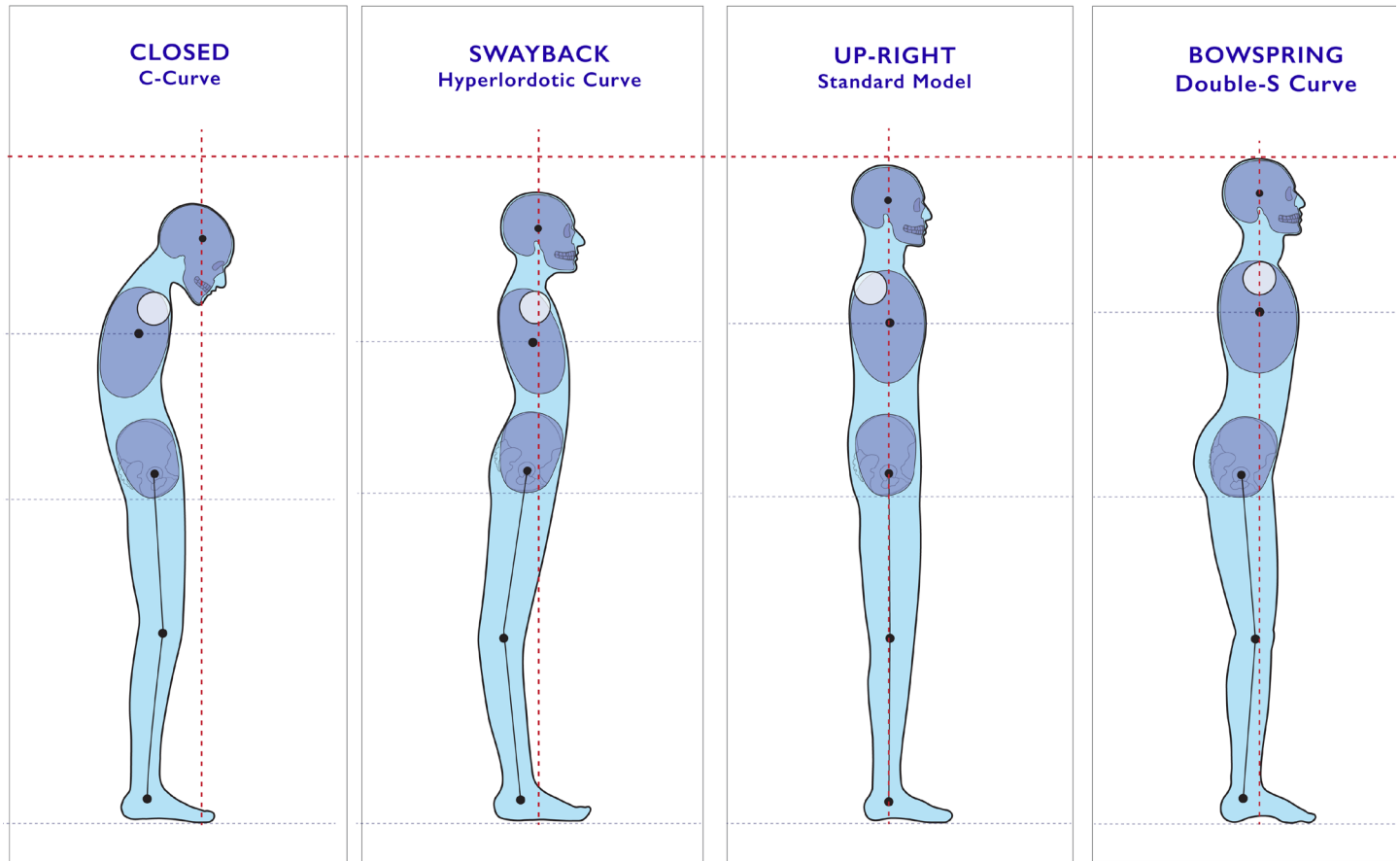
Roots



Bowspring Algorithm

1. Center
2. Wings
3. Roots
4. Apple-Cores
5. Crown

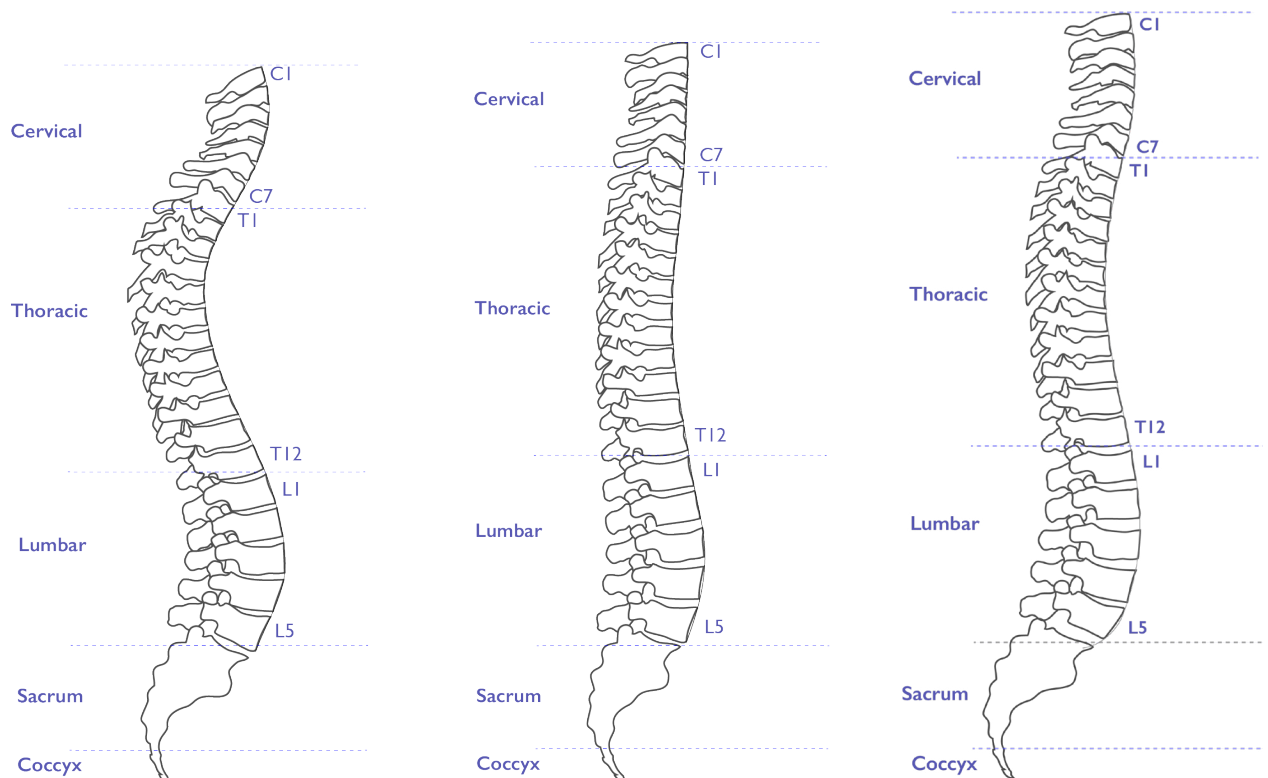
The wavy, long shape of the back in the dynamic neutral alignment of the spine is the quintessential form in which the posterior chain of myofascia can be fully engaged for optimal functional movement.



Collapsed Spine

Straight Spine

Dynamic Neutral



Myofascial Tonus

Our postural shape is sustained while we are at rest by the default tension level within our myofascia. Varying levels of tension in different areas of the body help to form each individual's unique posture.

In the tensegrity form of the Bowspring, the tension of the fascia is uniformly toned around both the front and the back of the torso so that the bones of the spine can be spaciouly extended up toward the top of the head. When all 10 Key Areas are integrating towards a balanced alignment, then the whole body is light and powerfully springy in its functional movement.

The word 'tonus' comes from Greek language meaning 'tension'. The collagen and muscle fibers run in long arrays of molecular spirally filaments. These visco-elastic strings of connective tissue – fascia – run up and down the body (y-axis) on all sides.

Proteins organize into triple-helix strands of collagen, which then further self-assemble into larger strands of muscle fibers, which in turn connect into more tightly bound tendons at the ends and edges of our bones, while the larger organization of fascial lines run the length of the body from head to toe. The fascia is like a netting, a webbing, a living matrix of highly organized cellular tissue that encapsulates our muscles, bones, organs, glands, nerves and vessels like a full body suit. It is through the triangulating tension lines of the myofascia in harmony with the universal form of the skeleton that a tensegrity is created in the body. With every joint, organ, and gland floating in optimal alignment within the tensegrity of the whole body, all biological function is enhanced -- healthy blood circulation, nerve growth, neuro-glandular balance, and any functional movement.

The Greek sage, Pythagoras used the varying tensions of a string pulled in two directions to explain music, geometry and harmony. Similarly, we can have various tensions and correlated wave frequencies in the strings of our myofascia in relation to a base level of balanced tonus. Some myofascia is very flaccid with low tone, while some people with high testosterone typically have very tight or high tone connective tissue. Balanced fascia is gel-like when it is at a relaxed default level, and uniformly toned on all sides of the body while in a dynamic posture like walking. By embodying a wavy Bowspring alignment the tone of the myofascia can be balanced uniformly on both the front and the back, and on all sides of the body, creating a visco-elastic biotensegrity in which the bones float, and we are able to move with more serpentine agility and cat-like fluidity, highlighted with quick spring-like propulsive power.

Since the body's extracellular matrix is an integrated system through its facial organization, tension levels in the hands affect tension levels in the arms and shoulders, while tension levels in the feet affect the legs and hips. Tension levels of the fascia run up and down the entire front and back of the body connecting the peripheral parts of the feet and hands into the core of the body and to the top of the head.

When we are born, there is a "pre-stressed" tension within the connective tissue that naturally contracts to bend a baby's limbs in toward its center and gives the body its resiliency. This intrinsic level of myofascial tone is the pre-programmed default level that scientists designate as "human resting muscle tone" (HRMT). Although the

electrical activity of HRMT is EMG-0 (electro-myographic zero = no electrical activity), there is still an underlying constant tension in the connective tissue which is holding the form of the body at rest with no conscious effort.

The EMG signal is the electrical representation of the neuromuscular activation associated with a contracting muscle. It does not record activity when a muscle remains at a constant tension (isotonic), or even when it is eccentrically relaxing, (a controlled lengthening), which means that a steady, static position or alignment that allows for slow, smooth movement indicates the resting, balanced tonus of the connective tissue in the view of the Standard Model.

With no conscious effort and no active engagement -- our connective tissue apparently silent, there is always still an underlying tension in the myofascia. In addition to fascia and muscle, tendons, ligaments and cartilage also help to give stabilized movement within limited parameters to the outer body. Through our HRMT we are able to maintain our default postures for standing and sitting while being very relaxed and using no conscious effort to hold our position.

In addition to the steady pre-stressed level of myofascial tonus, there is a variable postural tension -- “active tonus.” When we move our body at different rates of speed during our normal daily activities, the nerves in the muscles ‘fire’ -- there is electrical activity which causes the muscles to contract, moving the bones in space. Active tonus can be either conscious or unconscious, but most of time our muscles engage habitually and we move in a default alignment without thinking.

Various levels of connective tissue tension are needed to maintain different postures and to make functional movements. This base level of muscle activity is considered the minimum necessary to sustain postural stability in balanced equilibrium positions like standing. It is clear that the muscle tone needed for standing is more than you need to sit or certainly to lie down. Active tone is associated with a higher level of muscle contraction than the pre-stressed HRMT.

As particular alignments of daily postures and movements become increasingly regular and normal, then their associated active tone levels are added to the baseline HRMT so the default resting tone of the myofascia changes over time. Our body recalibrates the minimum tension level necessary to sustain these normalized alignments and a new HRMT level is then set. So, one’s current HRMT is a combination of an intrinsic muscle tension which is constantly in the background and an active postural tension which is variable as we change daily activities. The more we move and position our bodies in the same way, hour after hour, day after the day, the myofascia tonus becomes calibrated to that default level of alignment.

Tension of connective tissue fluctuates on a spectrum between overly contracted and overly loose. Hypo-tonic myofascia indicates that the tissue is excessively lax and is not providing the minimum level of resilience and uniform pressure for balanced physiological and biomechanical functionality. Hyper-tonic myofascia indicates that the tissue is excessively tight and is inhibiting balanced physiological and biomechanical functionality. Muscles can be tight and stiff, but also weak at the same time. High tension in the myofascia in an area of the body doesn’t necessarily mean that it is strong. Similarly, low tension in the myofascia doesn’t necessarily indicate that it is weak. Furthermore, just because it doesn’t take any electrical activity in a muscle for it to have a minimal tonus

level to maintain a body part in position, doesn't mean that particular equilibrium position (HRMT) is an optimal alignment for functional movement or for the long-term health of the joint or the body. Postural tensegrity is not just balancing the body in a position without extra effort since the HRMT can hold our postural misalignments without measureable electrical activity in the muscles. Put plainly, just because a posture is steady, comfortable and relaxed doesn't mean that it is optimal alignment or healthy.

Our default posture which reflects in our base line HRMT is typically imbalanced in terms of myofascial tonus on the back and front of the body. One side of the body is usually tighter than its opposite side. Today, it is most common for the standard default posture standing or sitting to have tighter HRMT on the front than the back of the body. Also, there is a normal asymmetry in myofascial tone between the right and left sides of the body. One shoulder, one side of the upper back, and an opposite side of the lower back is commonly tighter and more dominant in its tension levels than the other side.

Through the nervous system, the body's intelligence is constantly monitoring its skeletal alignment, myofascial tone and directionality in relationship to the gravity field. If any connective tissue becomes too stretched or too loose or if a joint becomes too hyperextended, then the body will compensate and protect itself through counter-contractions in parts of the surrounding myofascia. Oftentimes, a muscle spasm and then subsequent chronic muscle tightening arises paradoxically from a misalignment in which an area of the body is being consistently overstretched or disengaged.

Conversely, a hyper-contraction of a muscle or a hyper-compression of a joint can result in inflammation and swelling as the body counters the damaging imbalanced forces. Soft, spongy, disengaged tissue that is held out of alignment for an extended period of time will increase its stiffness to protect and stabilize itself. Also, reducing range of motion and limiting postural positioning in any part of the body over time creates a stiffening and tightening of the fascia in the area which further limits functional movement.

If we collapse towards a relaxed sitting posture in a chair in which the seat is slanted backward, our pelvis tips back and our lower back rounds. The connective tissue on the back of the hips and lower back becomes more slack and stretched backward away from the bones. The belly and waist shorten and thicken as we sink in a relaxed C-curve sitting position. Every time we sit down toward a C-curve position, an imbalance in the myofascia front to back is reinforced. The longer we sit in this static, rounded posture, then the more the myofascia stiffens into this position. The fascia hardens overtime in that imbalanced position and so it becomes our default posture. It becomes increasingly more challenging to move quickly with light agility and power the longer we hold this C-curve position because of the imbalanced tonus in the myofascia between the front and the back of the body.

A true postural tensegrity is a dynamic balance of push and pull forces on all sides in which no one part is working more or less than another other part. The Bowspring method creates a wavy shape in the spine, and curvy mounds and hollows throughout different parts of the body to increase the capacity for uniform myofascial tonus on all sides of the body. This even engagement of the myofascia is balanced with an equally powerful inner expansion and extension of the myofascia in a tensegrity of the Bowspring.

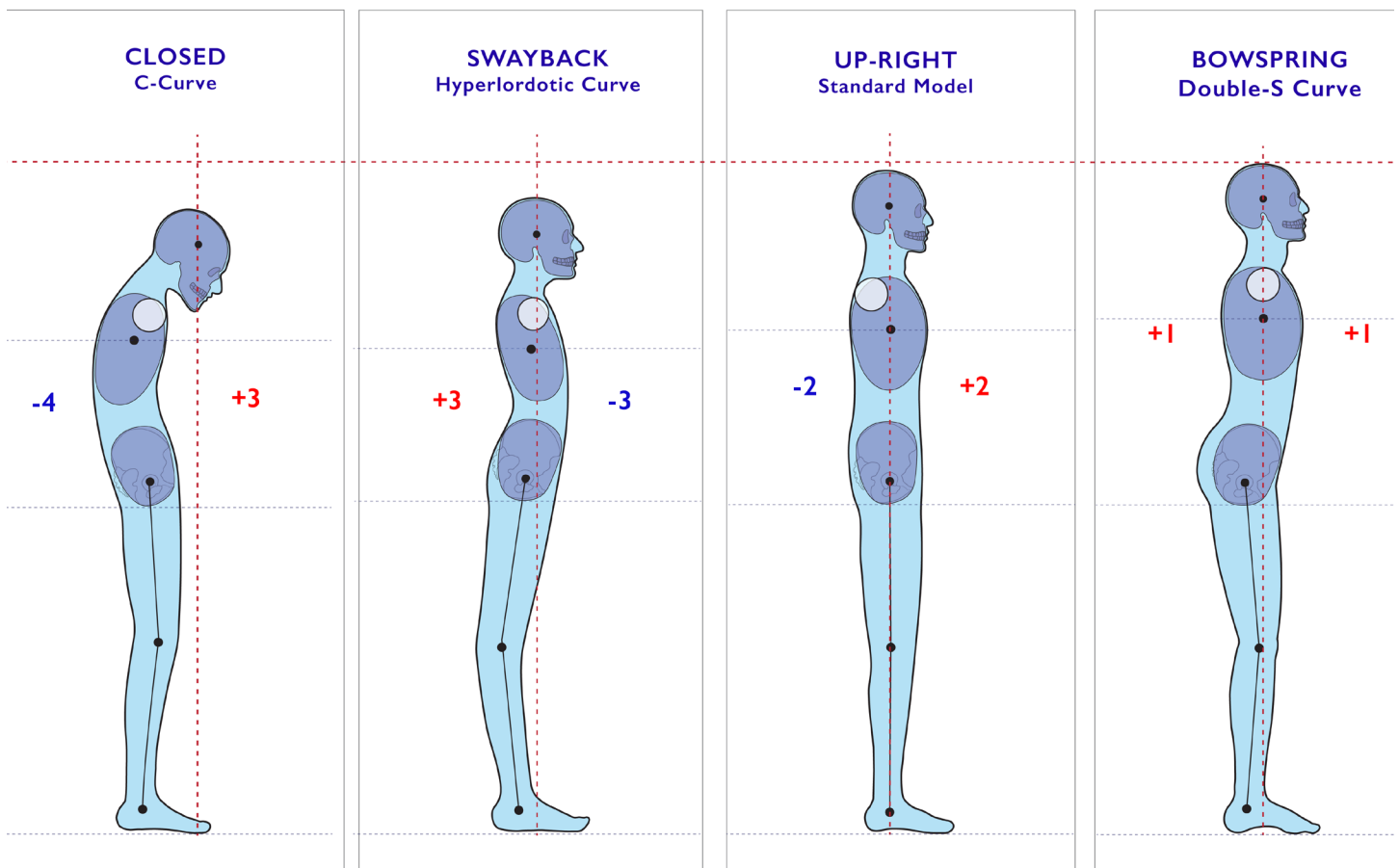
Differences in Myofascial Tonus -- Back and Front of the Body

The static, resting myofascial tonus of the human body is typically imbalanced between the back and the front of the body in most people. Due to sedentary lifestyle in which the person sits in a rounded, closed posture for the vast majority of their waking hours, the front of the body is hypertonic while the back of the body has low tone.

The swayback person has hypertensive myofascia on their lower back and low tone on the belly and front body.

The linear, up-right alignment of the Standard Model emphasizes strengthening the front of the body, particularly by shortening the abdominal muscles. The myofascia of the back of the body is released and stretched up by rooting the tail down and extending up through the back of the neck.

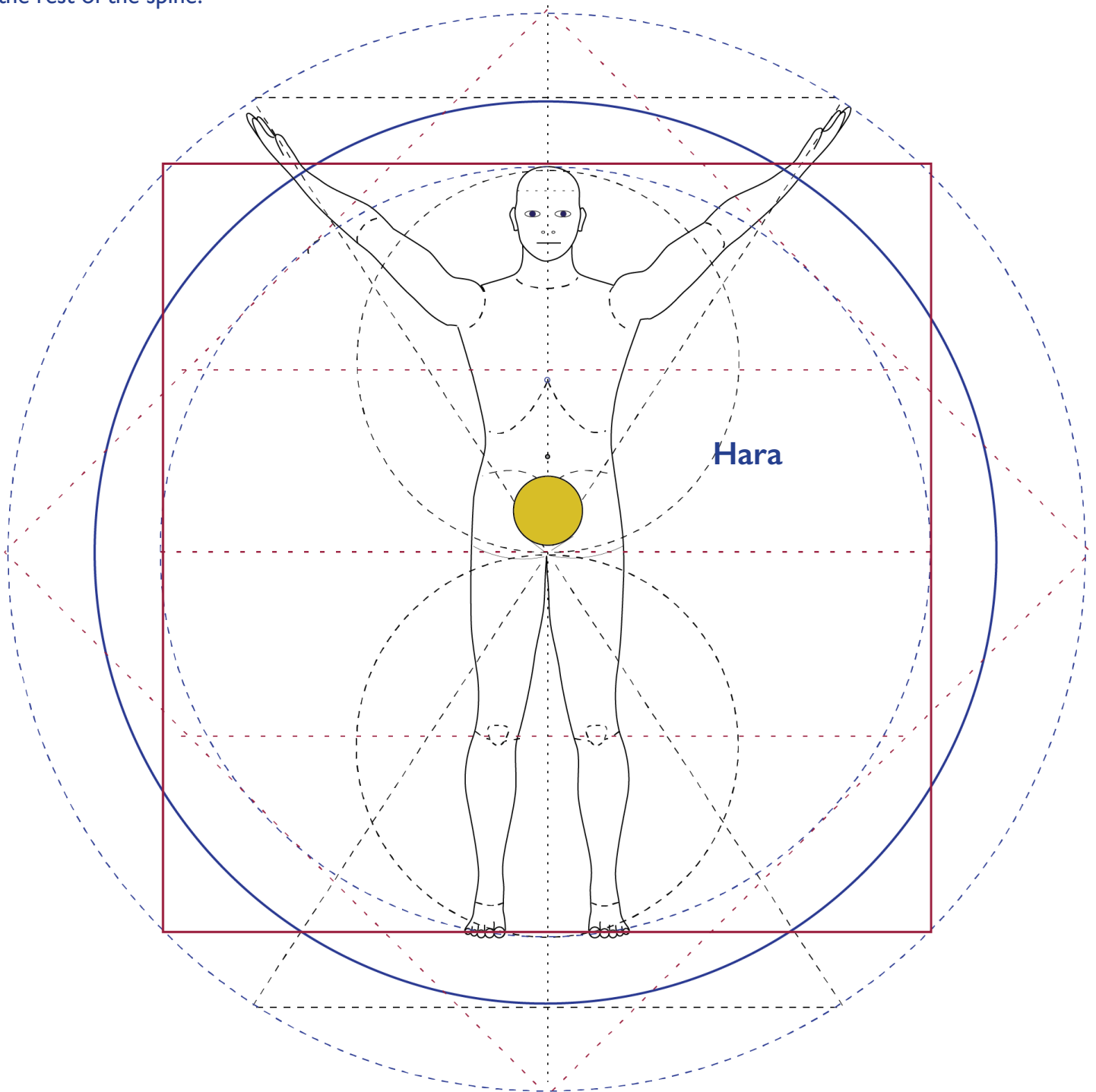
The Bowspring is a dynamic posture of 'ready position' for functional movement in which the myofascial tone is actively balanced on both the back and front of the body.



The Roots

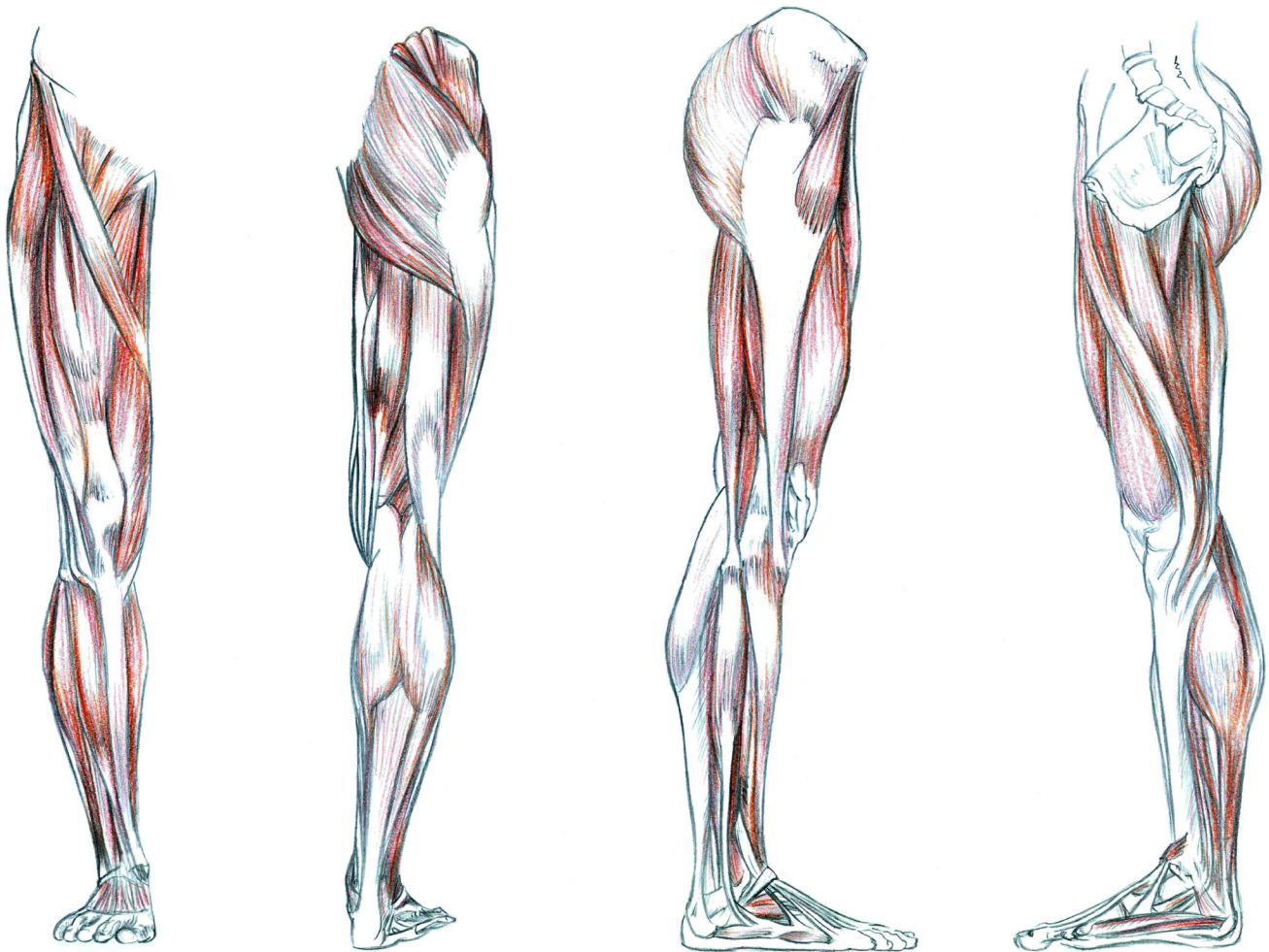
Feet - Legs (Knees) - Hips

The bottom half of the body provides the functional power for walking, jumping, running, and gives the rooting thrust for the propulsive power of the upper half of the body—the central channel, spine, torso, etc. The fascia around the feet connects up through the legs into the hips, so if any part of the Roots is imbalanced in its tonus, then there will be an alignment imbalance in the pelvis and lower back, which negatively effects the alignment of the rest of the spine.



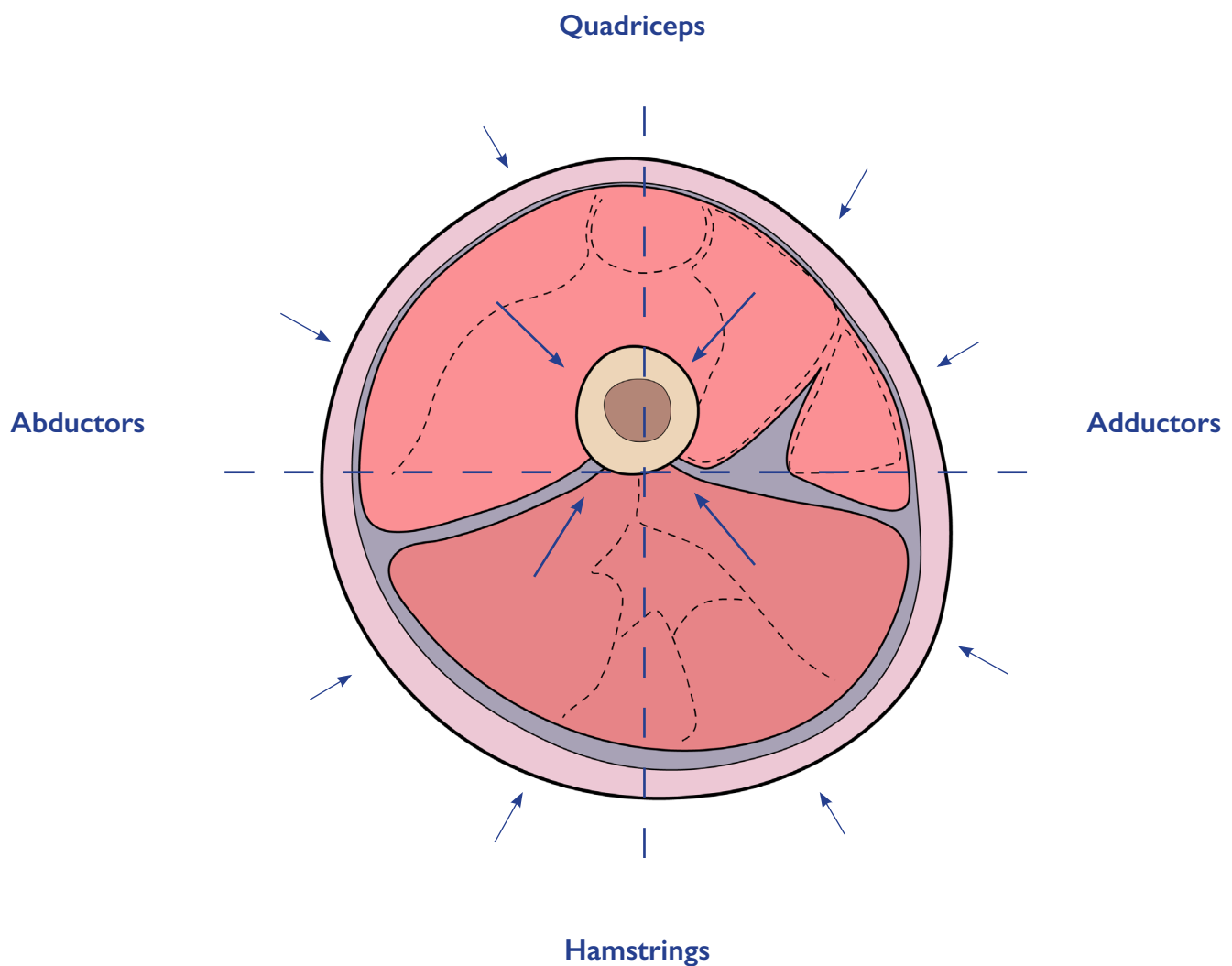
Myofascia of the Roots

The muscles and fascia of the legs are generally organized up and down the longitudinal axis (y-axis) in long, spirally bands. From the feet, which have a quarter of the body's total number of bones (52/206), the muscles on the back of the legs go from the soleus (1) to the bicipital gastrocnemius (2) to the hamstrings (3). There are 4 muscles on the front of the thighs, the quadriceps. All of the feet and leg muscles are interconnected through the global engagement of the fascia which go up into the hips and the central core of the body. The glutes (gluteus maximus, medius, and minimus) are designed to be spring-loaded up and in toward the midline, the sacrum to give the maximum propulsive power for walking, jumping, hopping, and running. The myofascial alignment of the Roots starts at the feet, so misalignment of the feet will reflect in misalignment of the hips.

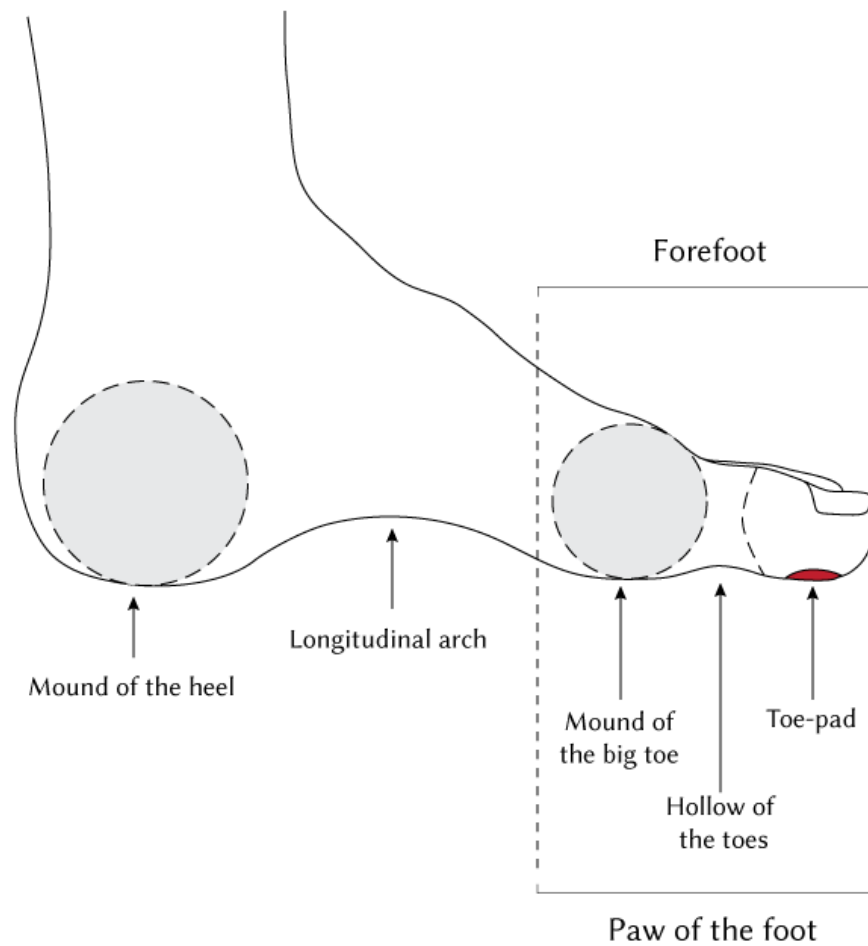
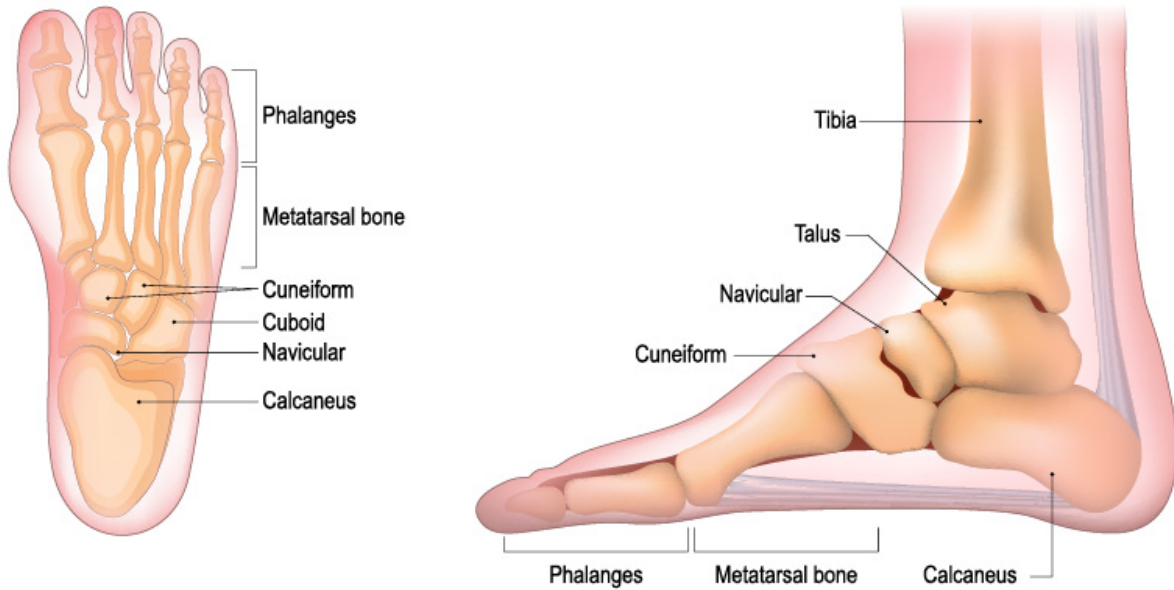


Uniform Tonus of Myofascia

Here is a view of a cross-section of the thigh with the femur bone positioned towards the midline of the leg. Uniform myofascial tonus of the legs is a concentric squeezing into toward the center, the midline of each leg. Each leg is geometrically organized up and down; medial (adductors) and lateral (abductors); and back (hamstrings) and front (quadriceps).

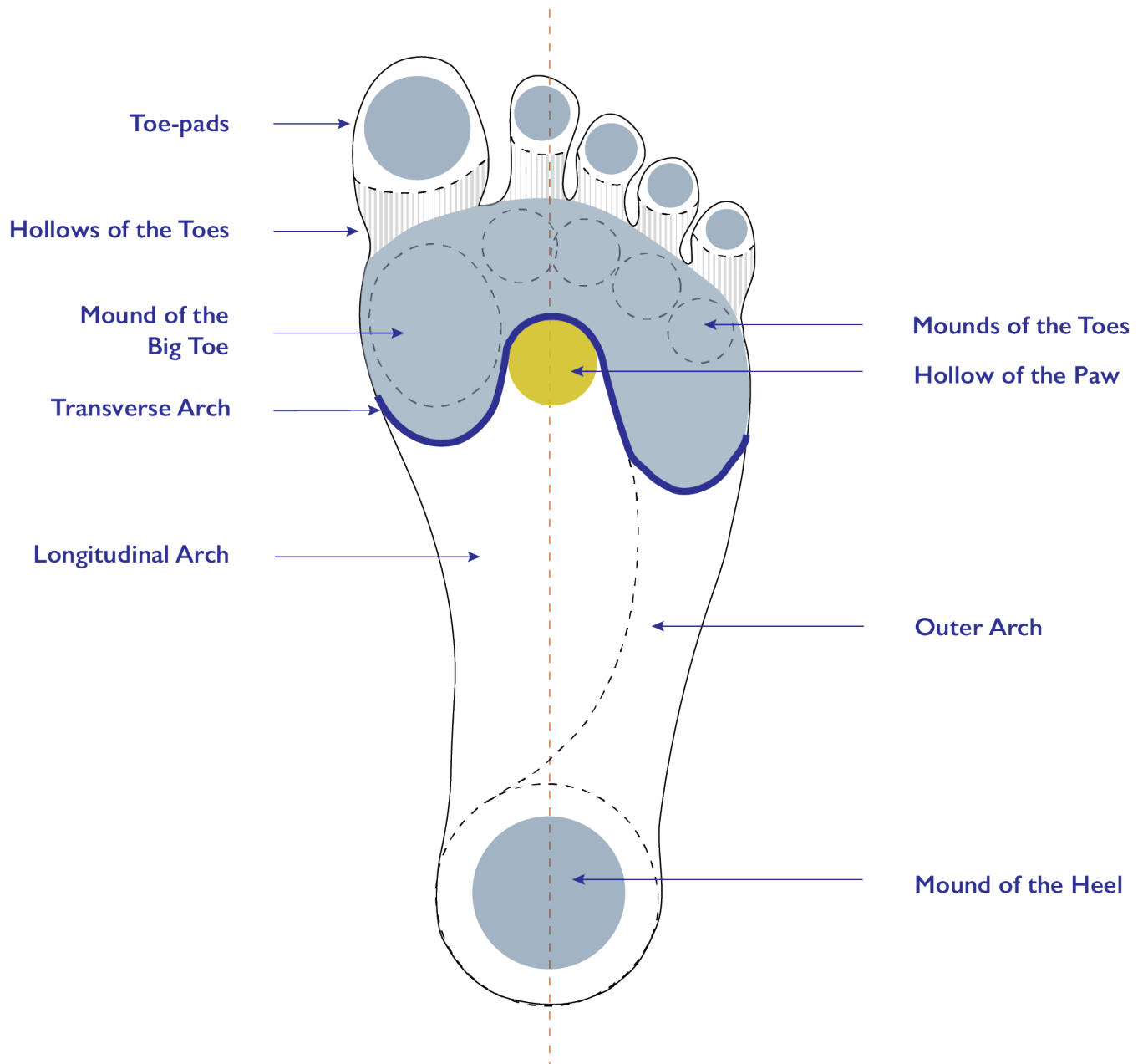


Anatomy of the Foot



Universal Alignment of the Foot

The universal alignment of the foot is oriented to the y-axis (longitudinal arch) - the length of the foot from the heel to the tips of the toes; the x-axis (transverse arch) - the width of the paw of the foot from the inner edge of the mound of the big toe to the outer edge of the little toe side; and the z-axis -- the bottom of the foot to the top of the foot.



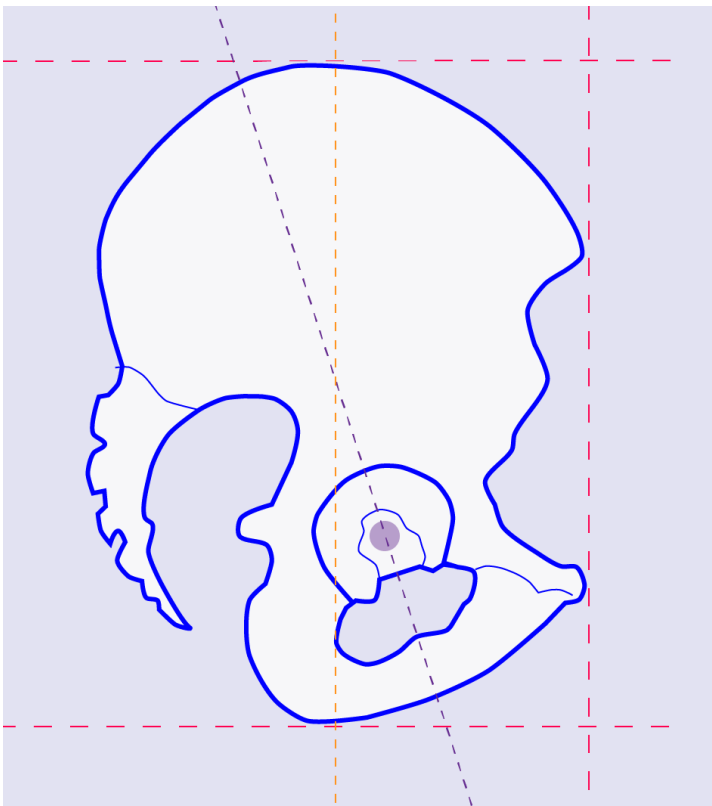
The forefoot, the paw, is the key area of power in the foot. The degree of engagement of the fascia of the Roots - the feet, legs and hips is directly connected to the capacity to engage the transverse arch by squeezing the sides of the feet to deeply hollow the center of the paw.

Universal Alignment of the Pelvis

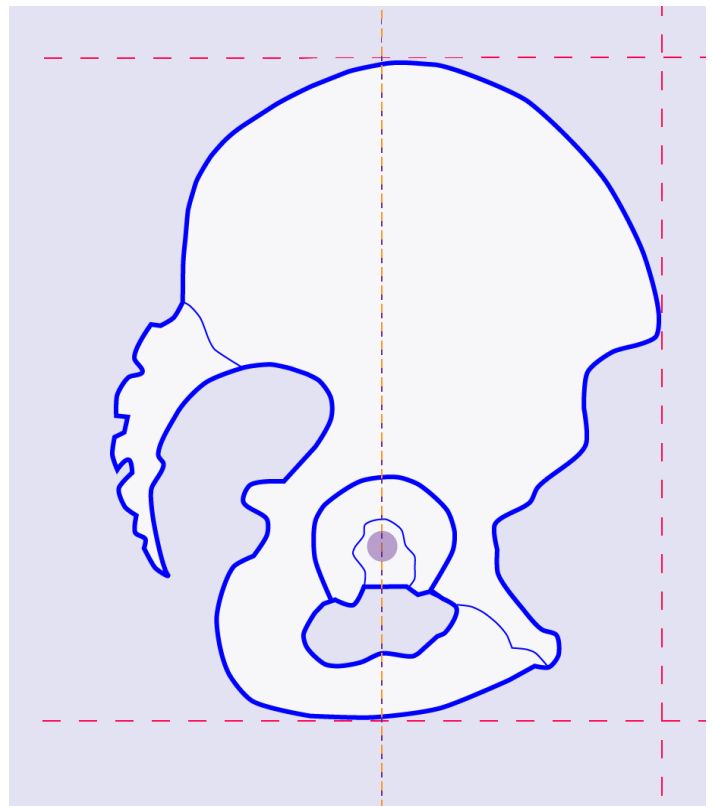
The Standard Model of biomechanics defines a balanced pelvic alignment with the front of the pelvis vertically aligned. An anteriorly tipped pelvis is considered an imbalanced postural alignment that leads to hyperlordosis or an excessive curvature in the lower back, and thereby creating compression and injury.

The Bowspring method presents the emergent paradigm of universal dynamic alignment that incorporates a wavy myofascial form that provides tremendous spring and agile power without stacking or straightening the body. The pelvis can be anteriorly tipped so the bottom of the pelvis is level. It is in this alignment that the glutes can have more power to mound. The top of the thighs can be pulled back, while the lower belly and the lower back can be extended and bowed forward and up. The rising of the ribcage, while the hips are rooting down and back, gives wonderful opening and lengthening to the spine and to the psoas muscle. Notice that universal geometry of the acetabulum is aligned with the vertical when the bottom of the pelvis (ischial ramus) is level. This is dynamic neutral position for the pelvis, where the connective tissue of the hips can have uniform tone and maximum functional power. Static neutral alignment is for rest, not for functional movement. Dynamic neutral is for postural tensegrity, allowing for power and springy agility.

Static Neutral



Dynamic Neutral

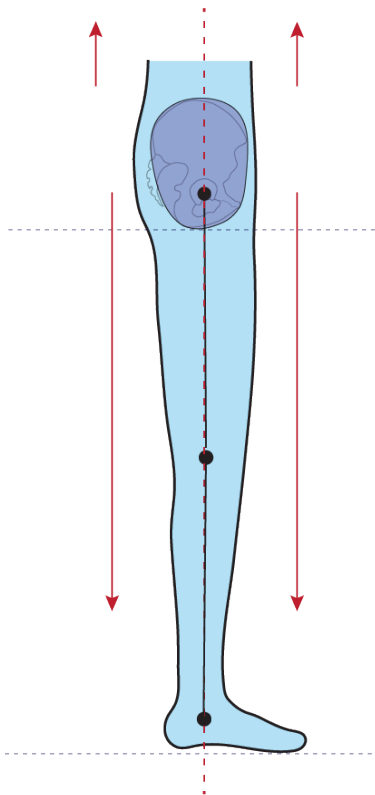


Universal Hip Alignment

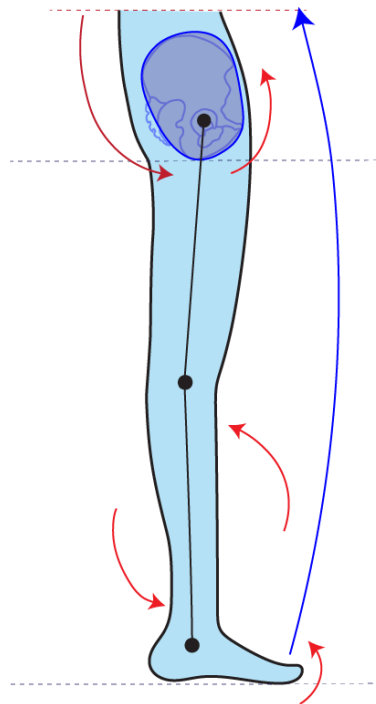
Our hips are the powerhouse for us to root and rise with truth and freedom. When we are afraid, then we tuck under and close our pelvic floor for security. This unconscious contraction of the hips is one of the most primal instinctual reactions programmed deep in the back of the reptilian part of our brain.

We are told to stand up straight so the front of the pelvis is vertical - so the ASIS (anterior superior iliac spine) is lined up over the pubis symphysis. This is “neutral” pelvis in the standard model of posture and biomechanics.

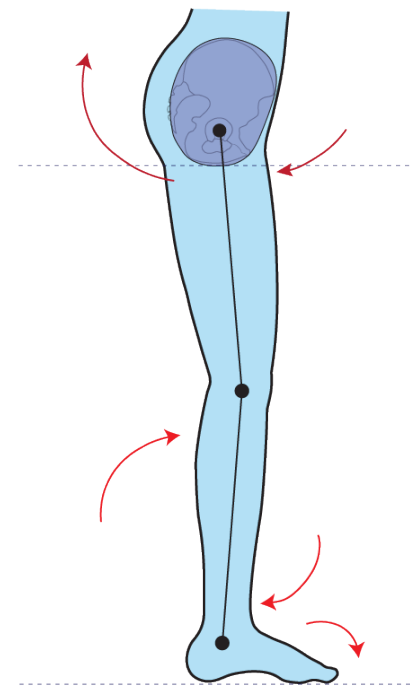
It takes a feeling of safety and a willingness to allow the pelvis to anteriorly tip so that the bottom of the pelvis is level and the pelvic floor is naturally open. In the Bowspring method, the tip of the pelvis happens dynamically from the feet engaging the back of the legs and the glutes to pull the bottom back.



Standard Model alignment – stacking middle of hips, legs, and feet in a vertical line.



Closed Position – psycho-emotional contraction that lifts the toes, locks the legs, and tucks the tail.

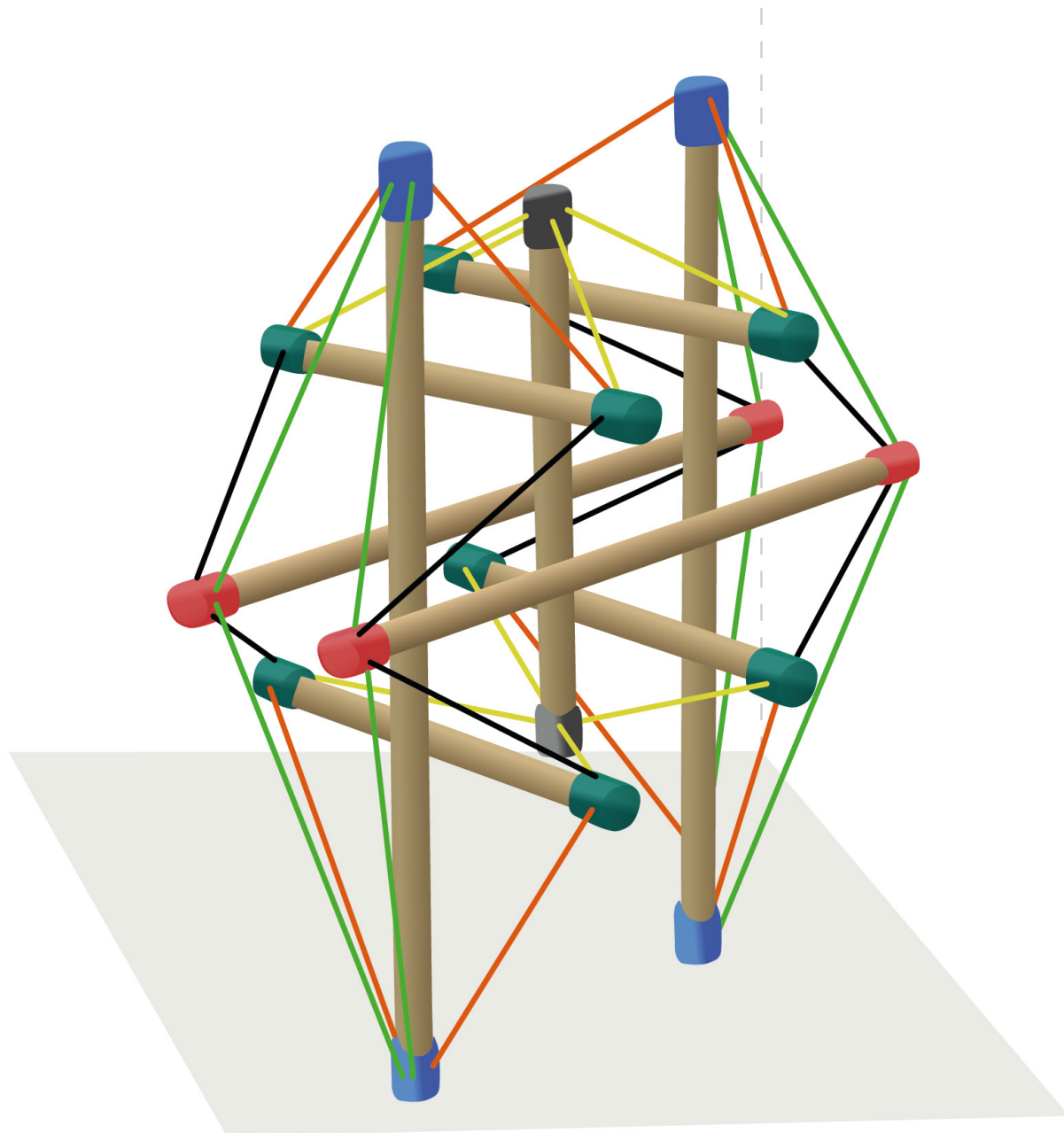


Bowspring – toes down, hollow behind the knees, anterior tip of the pelvis, glutes mound upward.

Tensegrity Model of the Pelvis

A simplistic tensegrity model of the pelvis can be assembled using wooden struts organized in the y, x, and z axes and connected by tetrahedral tension lines. The y-axis struts represent the two legs, the sides of the hips, and central channel. The x-axis struts (red struts) represent the back and front of the sides of the pelvis, while the four z-axis struts (green ends) give an approximation of the top and bottom of the sides of the pelvis.

Typically, most people have hypertension on the front of the legs and hips, and more on one side than the other.

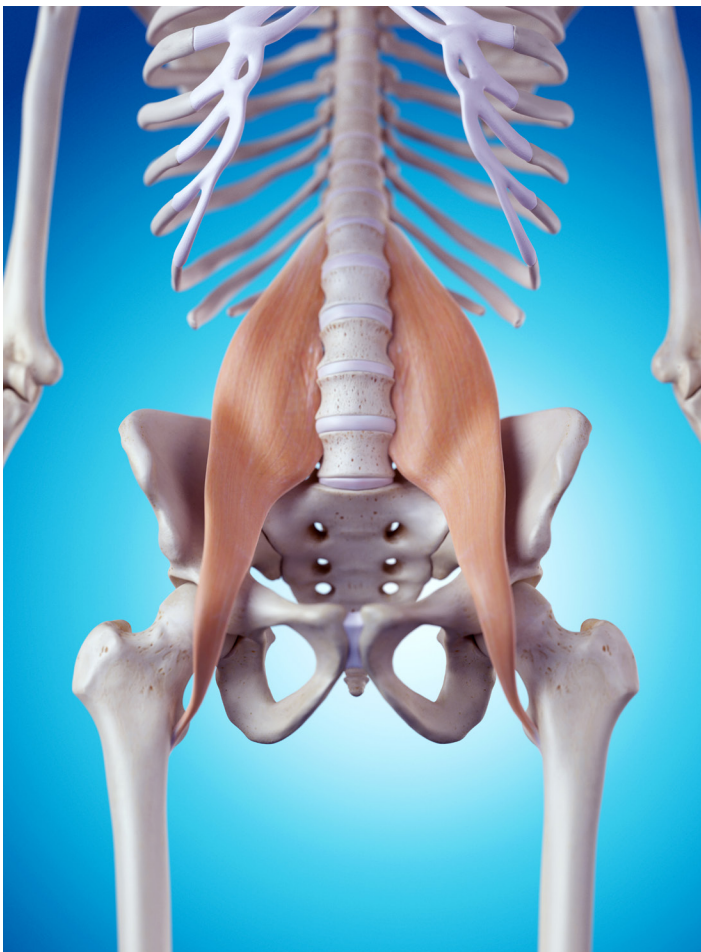


The Psoas

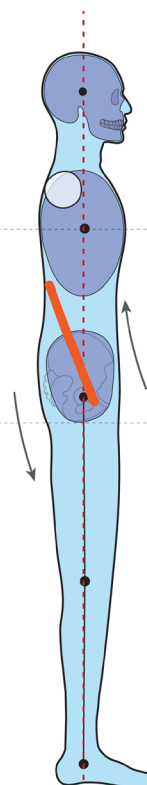
The psoas is the main hip flexor muscle, which is key for walking and all ambulatory movements. It transverses from the lower back and base of the back ribs forward and down, hooking to the top, inner edges of the femurs. Under most daily circumstances, its stable end (muscle origin) is at the top of the lower back and its more mobile part is the bottom of the hips / top of the leg bones. Therefore, when the psoas generally contracts, the hips flex -- and the legs folds upward for the body to walk.

In the Standard Model, a short or hyper-contracted psoas is assumed to create excessive lumbar curvature and subsequent compression. So, the remedy in this mainstream view is to stretch the psoas using lunges or back-bends with the tail rooting and the front body drawing in and up.

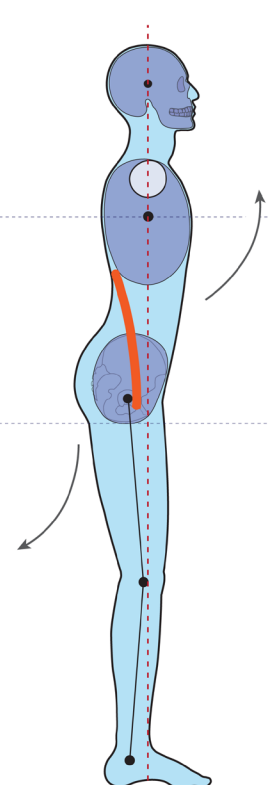
In the emergent paradigm of wavy psotural alignment like in the Bowspring, the psoas is lengthened with the pelvis in a dynamic neutral position, and with the glutes actively drawing upward while rooting the thrust of the hips of legs back and downward. Instead of trying to stretch the psoas straight, the Bowspring method extends the belly of the psoas forward and up.



UP-RIGHT
Standard Model



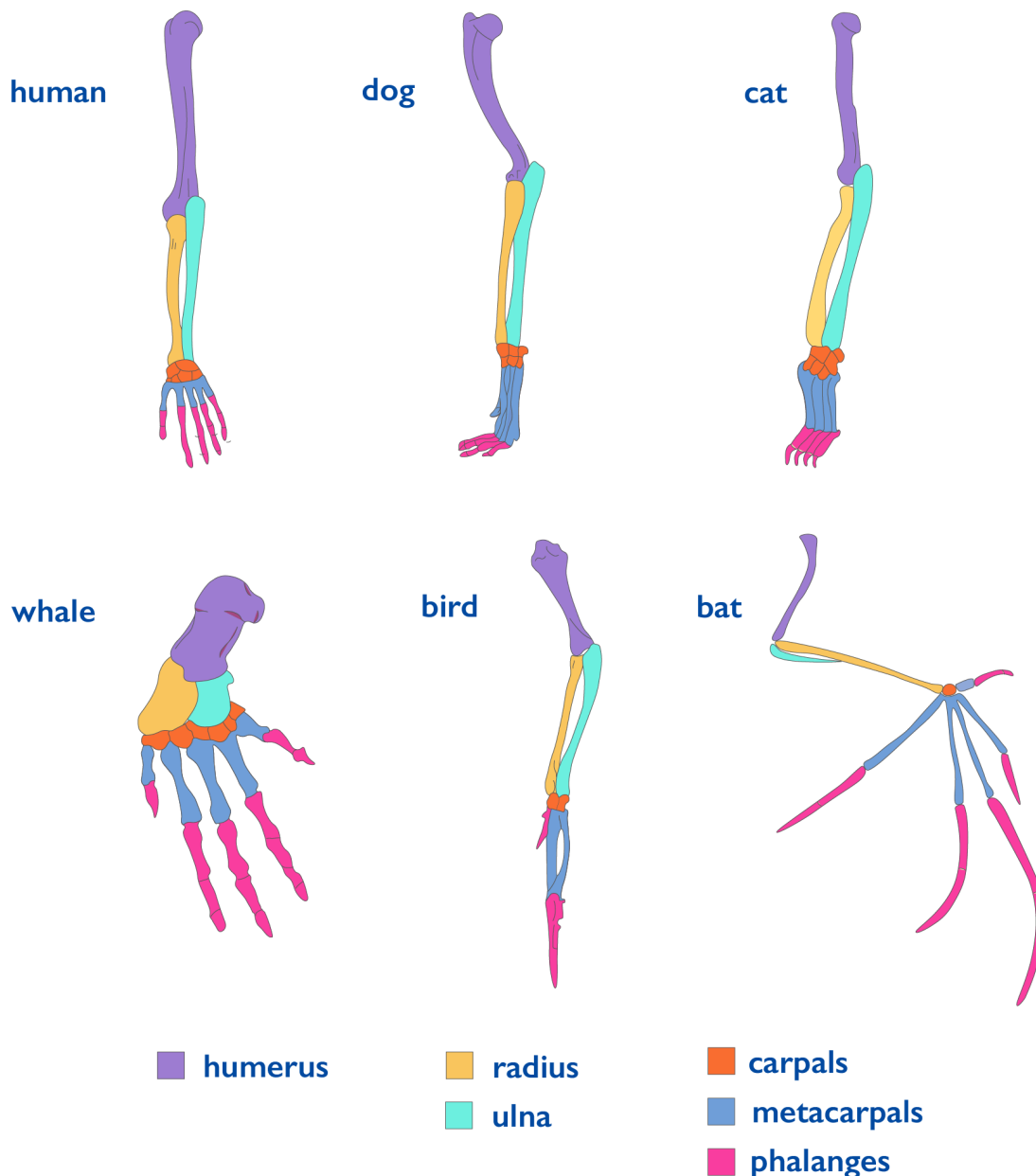
BOWSPRING
Double-S Curve



Universal Anatomy of the Wings

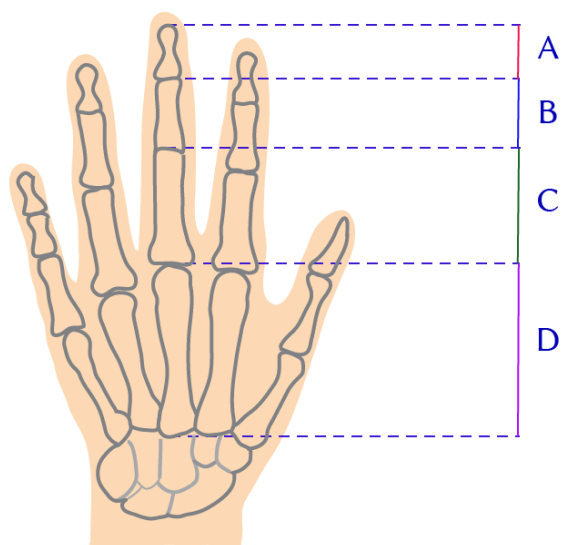
hands, forearms, and upper arms

There is a deep intelligence in the universal form of the body across species. From the core of the body, the appendages of the arms branch out from one main one (humerus) to two rotating bones in the forearms (ulna and radius), and then into the increasingly complex 5-fold structure of the hands (composed of carpals, metacarpals, and phalanges.)



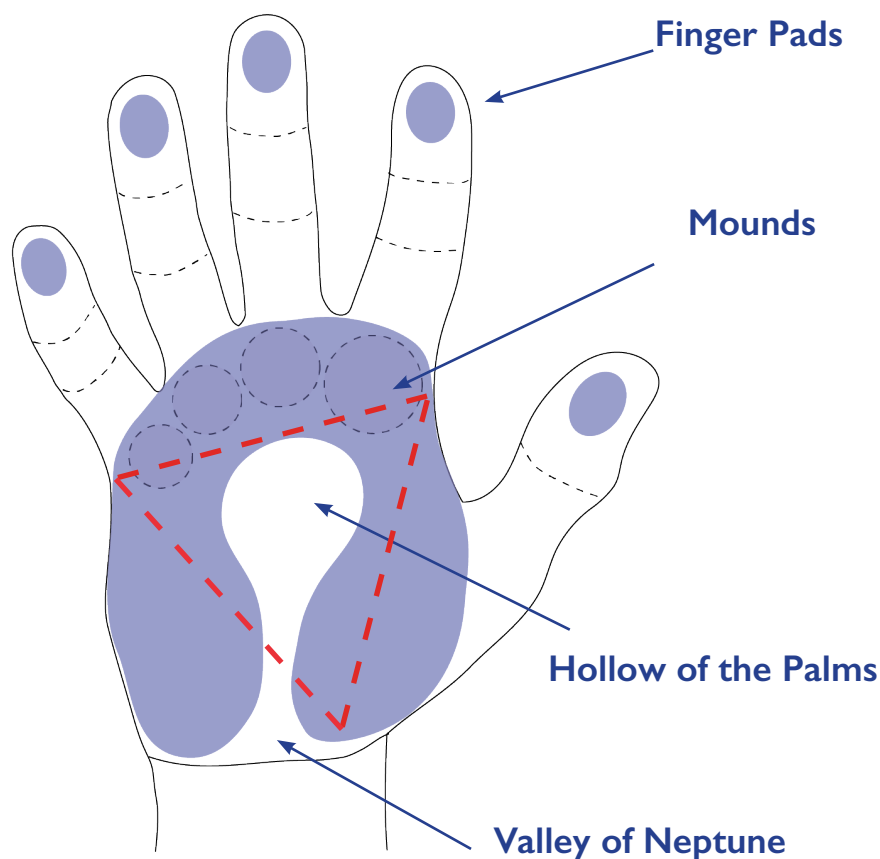
Universal Geometry of the Hand

Like the feet, about a quarter of the bones in the body are found in the hands (54/206). When the little bones of the hands are in a balanced form with each other, the myofascial tonus of the hands can be balanced so the hands become very dexterous and agile, but also very powerful. In the Standard Model, it is emphasized to stretch the fingers wide apart to make the surface of the palm as large as possible. This inadvertently causes the top of the hands to be hypertensive and the palms to be flat without any 'hollow.'



$$\frac{D}{C} = \frac{C}{B} = \frac{B}{A} = \Phi = \frac{1 + \sqrt{5}}{2} = 1.618$$

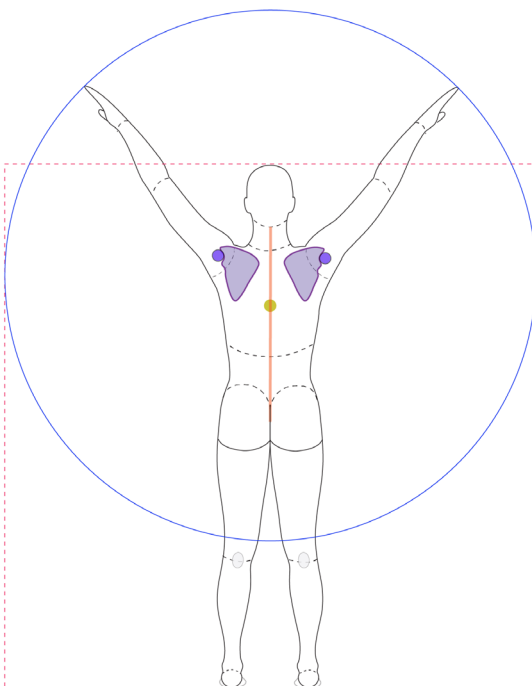
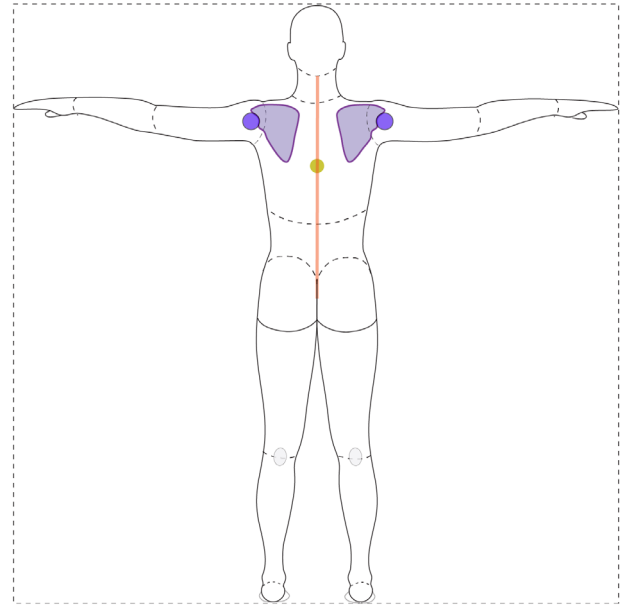
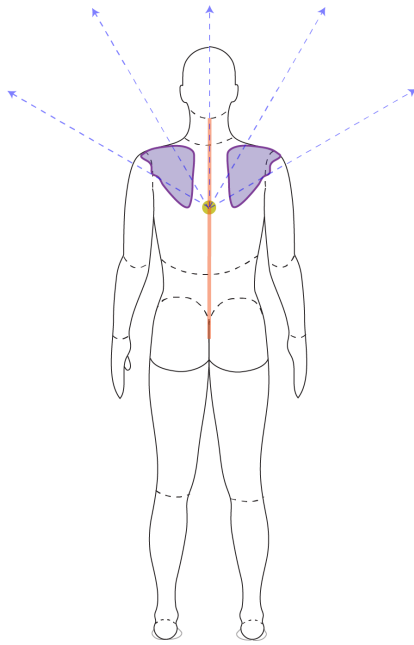
In the Bowspring, the hands are aligned so that the center of the palms is actively hollowed through uniform toning toward the midline, particularly at the base of the palms, creating a "Valley of Neptune." In this way, the hands become more like myofascial springs so that even a handstand can become a tensegrity in which there is lightness and spaciousness in the joints, and not dead weight on the wrists and hands.



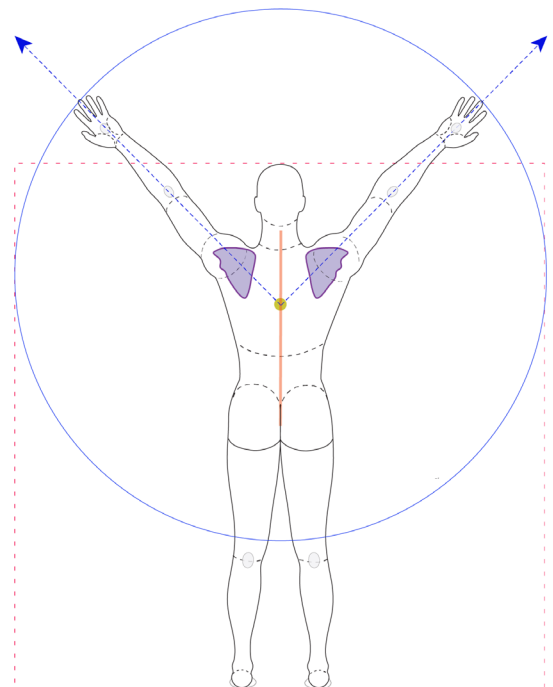
Wings

Shoulderblade V-Vector

Upper Arm Rotation

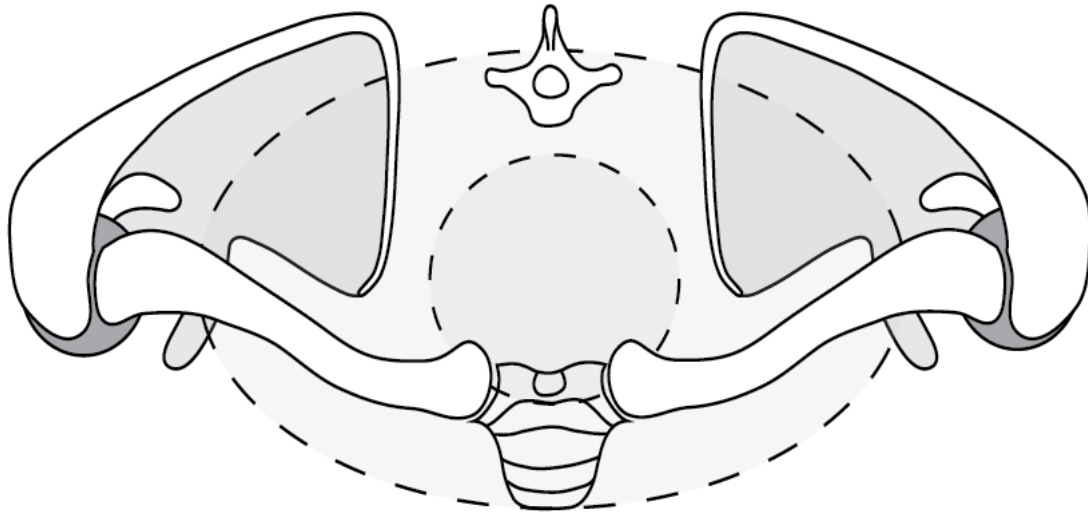


0 - V-Vector Arms
Inner Rotation

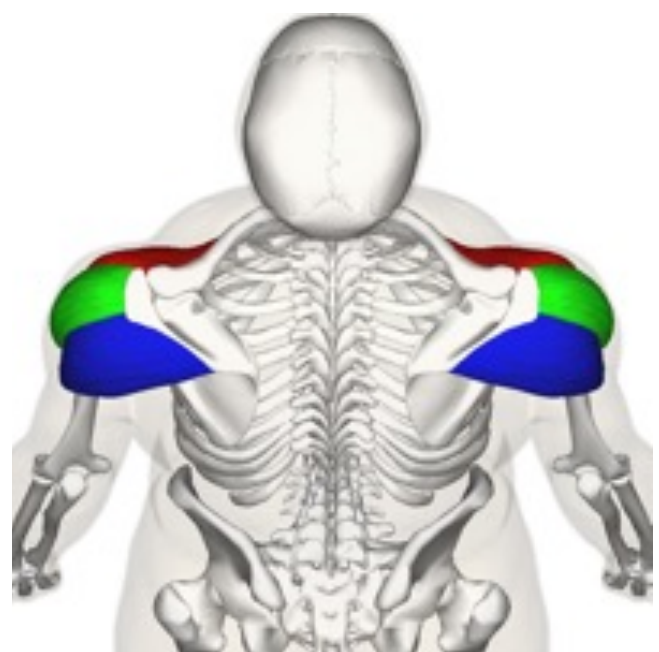
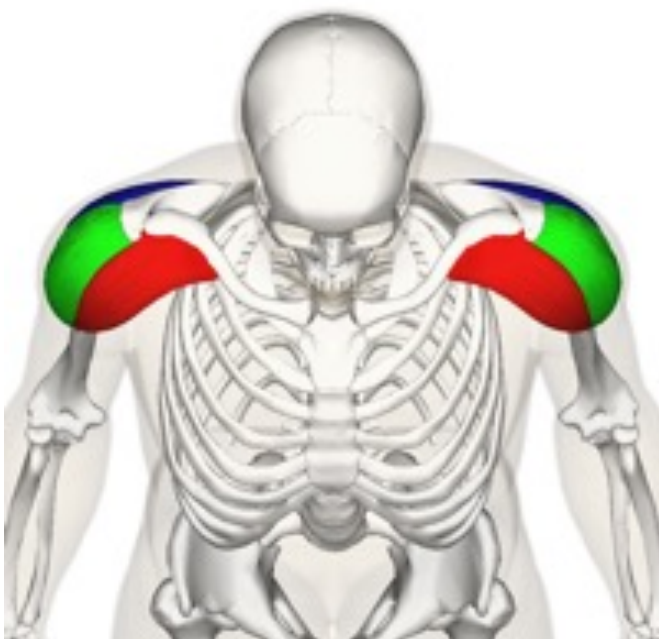


10 - V-Vector Arms
Outer Rotation

Shoulder Girdle

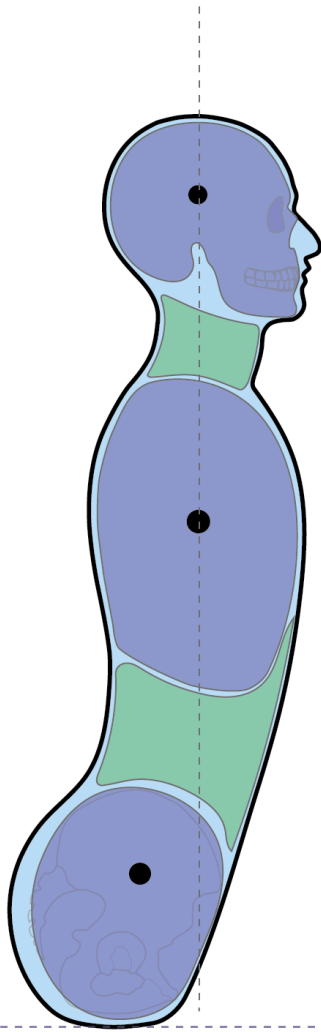


Shoulder blades (scapulae), head of the armbones, and collarbones (clavicles) are balanced front and back, and laterally, right and left.



The Deltoid Muscle - has 3 areas: front, rear, and head (center bundle in green). The default alignment of the shoulders is to contract the front and to pull the head of the armbone forward, while disengaging the rear deltoid and the rotator cuff. Source Current from the hands, up the arms, engages all sides of the deltoid uniformly, particularly the rear. Once engaged, then widen the shoulders maximum.

The Apple Cores



Bowspring Alignment
when standing or sitting

There are 2 “Apple Cores” in the body – the waist area (belly / lower back) and the neck. Both of these sections of the body have similar general forms and shapes. In the spinal sections, both the lower back (lumbar vertebrae) and the neck (cervical vertebrae) are designed to arch into the body with a lordotic curvature when we are standing or sitting in a dynamic neutral position. Additionally, both sections taper inward toward the core of the body as they elongate, hence the name of ‘Apple Cores.’

These two sections of the body connect the 3 Apples of the body – the ribcage, hips and head, all of which are more outwardly rounded in shape. The Apples energetically expand outward, while the 2 Apple Cores draw inward as the Central Channel elongates from the pelvic floor to the top of the head.

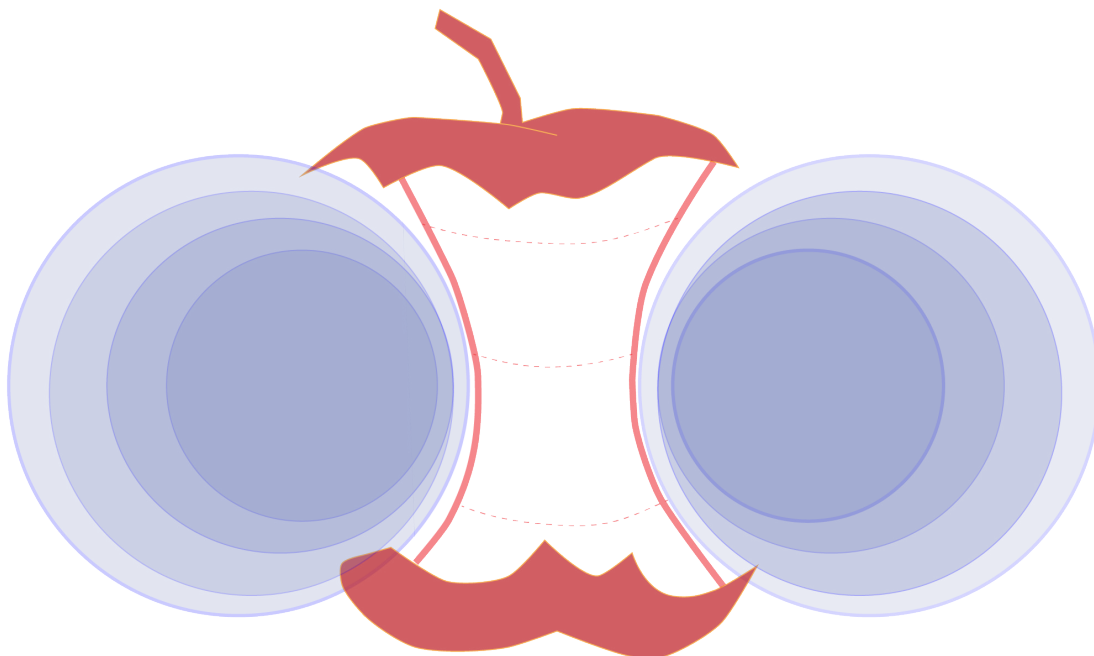
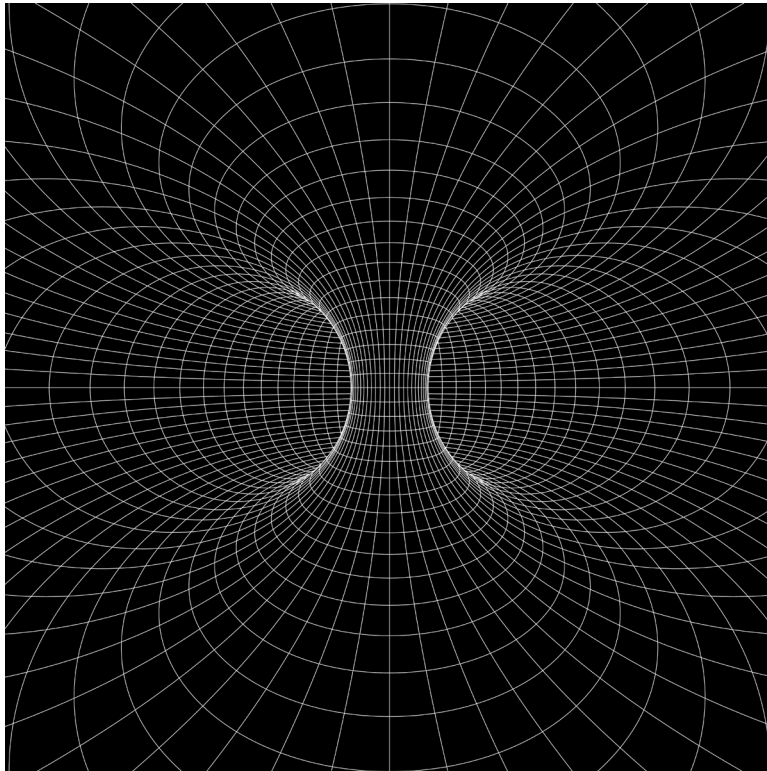
The Apple Cores general alignment is a bOw – a curving forward and up in the sagittal plane. The Bowspring method distinguishes between a ‘bOw’ and a bow, which is a forward bend rounding of the back. A bOw is an arching back to front of the lower back and the neck.

The Apple Cores are the most mobile sections of the Central Channel since they contain the least amount of bones. Both areas also have the greatest capacity for elongation of any other spinal segments or areas along the central core. Therefore, becoming taller through good posture, is largely a matter of properly aligning and extending the Apple Cores.

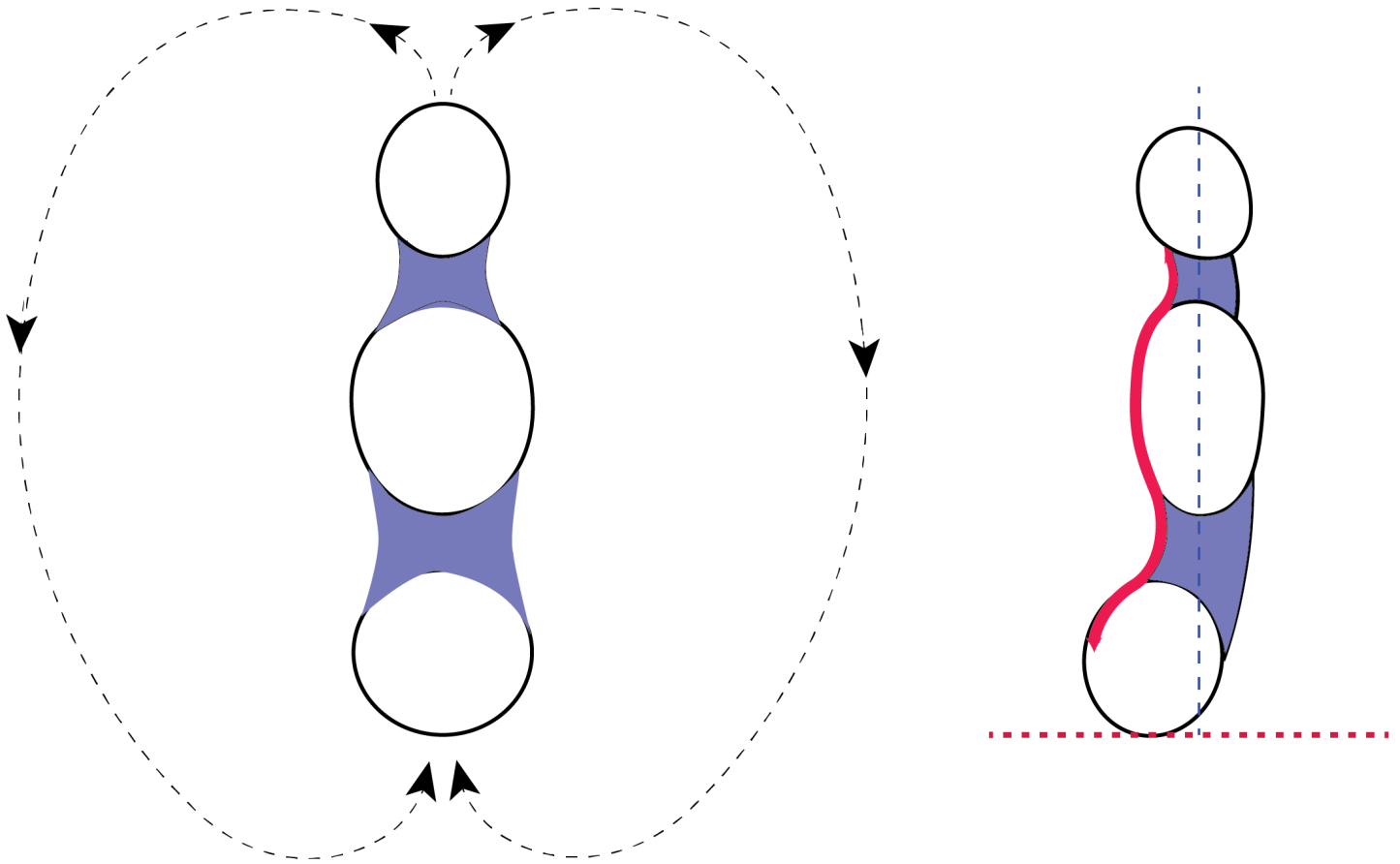
In the Bowspring alignment, the arching of the lower back and neck balance with the expanding Apples of the head, heart and hips to create a naturally wavy double-S shape curve on the back of the body. When in this balanced Bowspring alignment, we are able to fully feel and be sensitive to others around us while still being highly functional in our movements and daily activities in the world.

Apple Cores

The Apples are hyperbolic in form with the sides of the waist and neck drawing in toward the core of the central channel. The spool shape is described by the universal geometry of an inside of a torus. Commonly, the shape is that of an apple core.



The Apple Cores



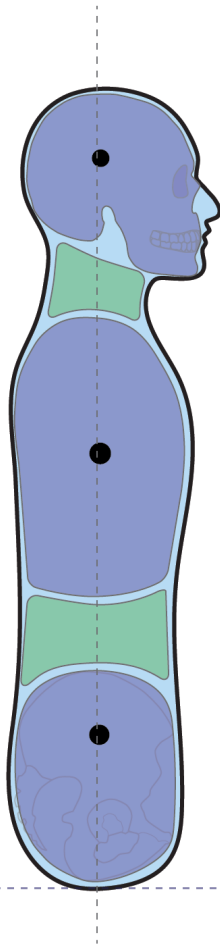
The Apple Cores taper in on the sides of the waist and neck when the Bowspring alignment is extended up from the core of the pelvis through the top of the head.

From the side view, the Apple Cores bOw forward and up from the pelvis to the head. The lower back and neck spinal curves are both lordotic -- curve inward, while the upper back is kyphotic -- convex.

Both the front side of the waist -- the belly and the front of the throat are bOwed long, up towards the crown.

In the Bowspring method, the central channel from the floor of the pelvis up to the top of the head is lengthened fully, not by flattening and straightening, but by bOwing and embodying the fullness of the natural curves of the body. When standing or sitting, the natural dynamic neutral alignment is with the ribcage fully expanded and rising upward, the center of the head aligned over the center of the ribcage, and the center of the pelvis actively spring-loaded behind the ribcage, and the pelvic floor level with the Earth. In this dynamic neutral alignment, the glutes are engaged upward, while the belly is bOwed long forward and upward. This gives a maximum, balanced length to the lower back and the belly.

Standard Model Upright Posture



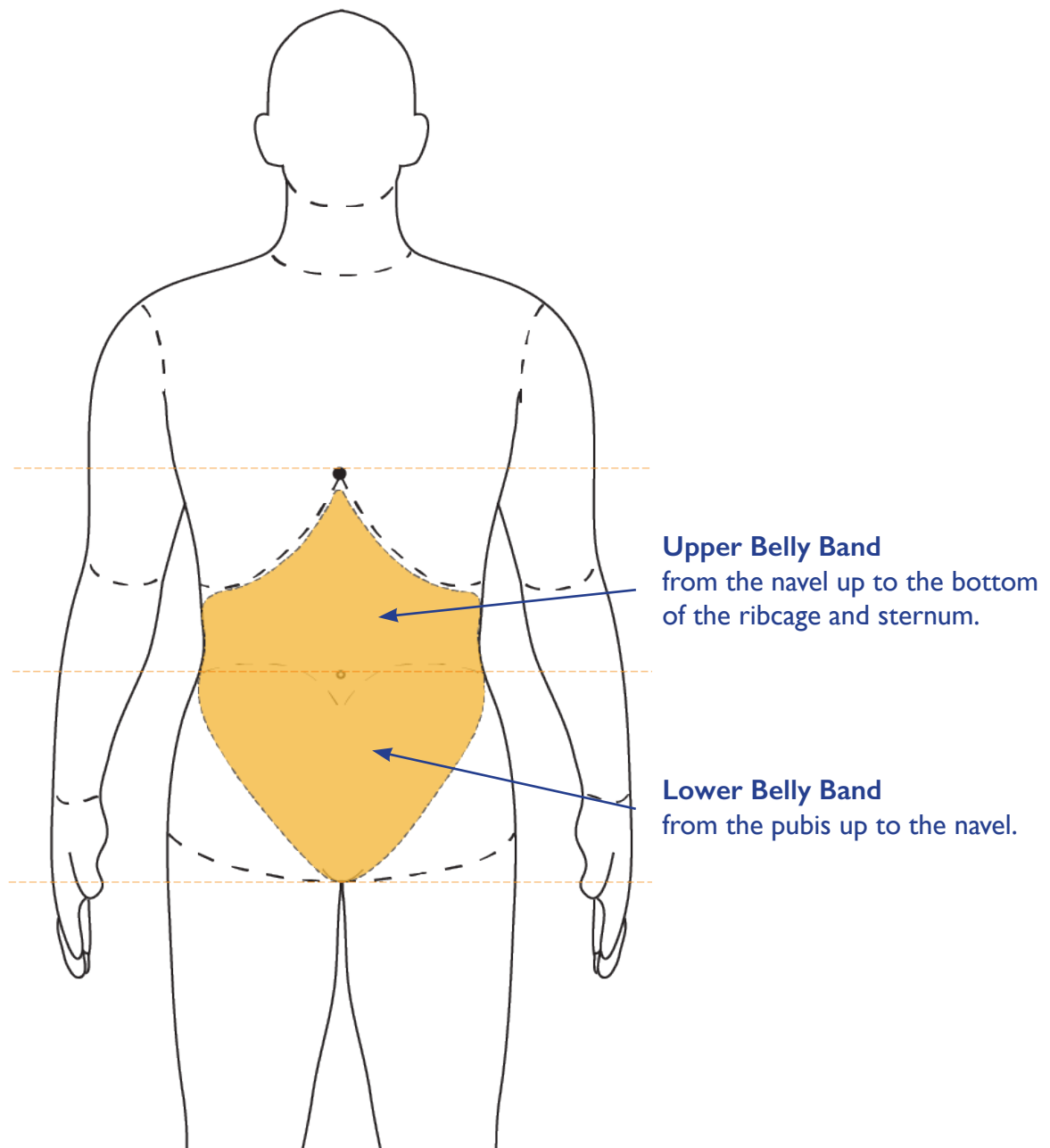
In Standard Model biomechanics or mainstream postural alignment, the sections of the waist and the neck are extended straight upward with the focus on the back side lengthening, while the front side is contracted.

The common postural idea is the front side is too weak to properly support the healthy lengthening of the lower back. Therefore in this view, abdominal exercises are recommended in order to strengthen and contract the front to prevent lower back compression from hyper-lordosis.

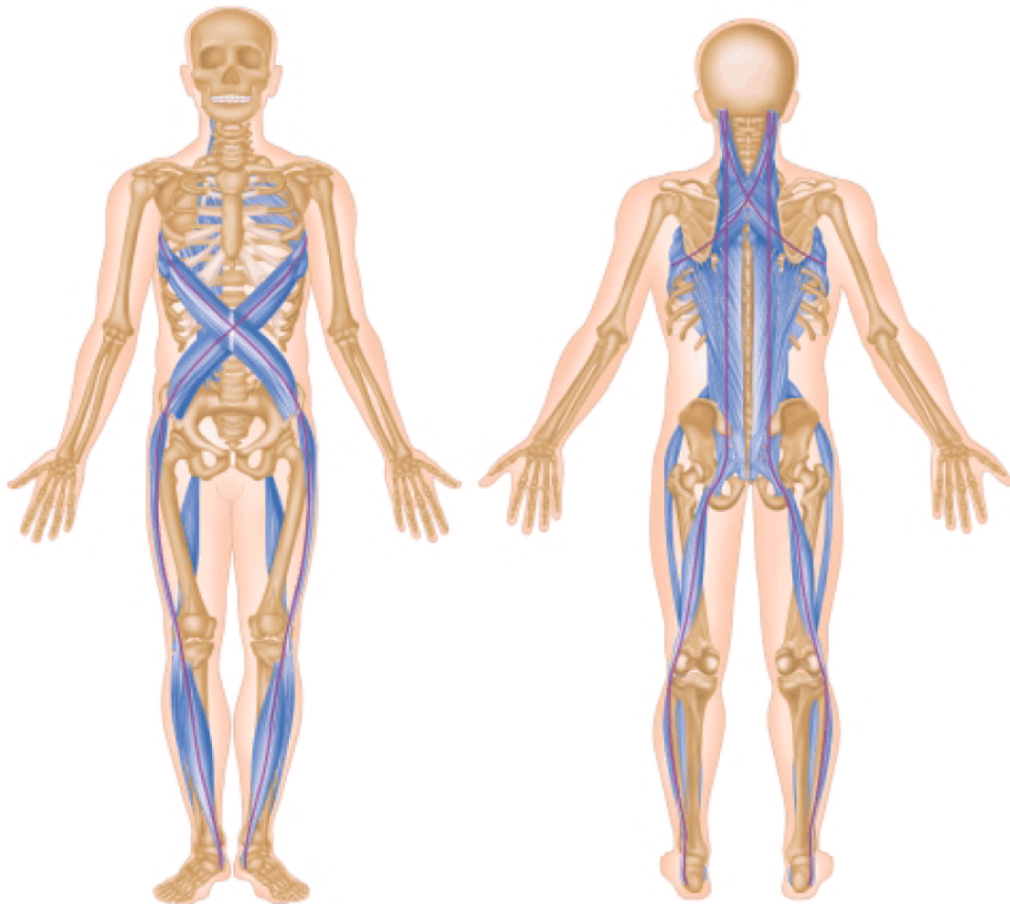
With the mainstream lower back therapy of flattening the lower back and shortening the abdomen through “crunches” or “sit-ups,” a temporary relief of lower back pain and compression may be experienced. However, the long-term effect of this upright posture is that the whole waist area and the neck are shortened and contracted. The spaces between the pelvis and the ribcage, and the ribcage and the head become more contracted and diminished. The spaces between the vertebrae are reduced as the tonus of the myofascia of the back body is lessened and the tensegrity of the spine is lost. Instead of a tapering in on the sides of the waist, standard abdominal exercises widen the circumference of the waist. Over time, the lower back gets weaker and more compressed, only further degenerating the spinal disks.

The Belly — Upper and Lower Bands

The belly area is defined as the front of the waist area, demarked from the front groins up to the ribcage. The myofascia of the belly generally run longitudinally up and down from pubis to the sternum, and the top front rim of the pelvis to the front floating ribs. The belly area is further subdivided into the 'upper belly band' and the 'lower belly band', which are demarked by the line of the navel -- the most tapered, smallest circumference of the waistline, and the area of bOwed convexity. The upper belly band is synonymous with the solar plexus, while the lower belly band is below the navel and curved down and back to the groins. Both the belly bands are bOwed with maximum length and somatically open.

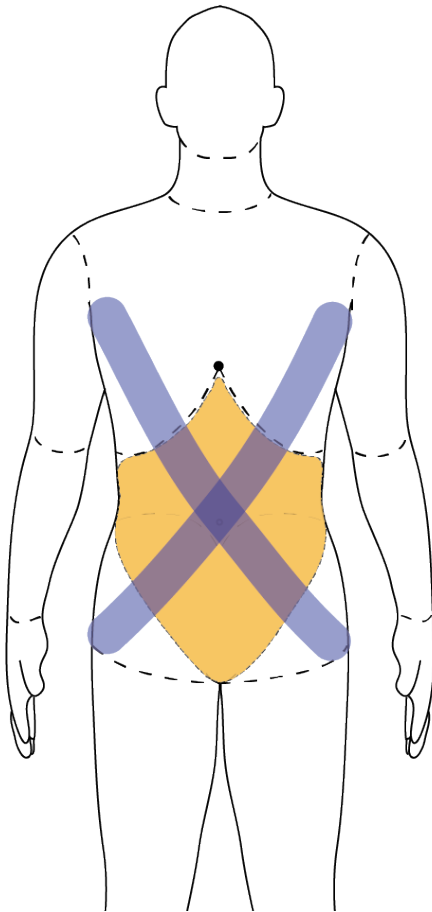


Thomas Myer's *Anatomy Trains* -- Spiral Lines of Fascia



The general organization of bands of fascia in the body is longitudinal - running up the length of the body from the feet to the head. The criss-crossing of thick, spiral lines of fascia on the belly between the pelvis and the ribcage provides tremendous structural strength to an area of the body with the least amount of bones. The Bowspring alignment trusts in this abdominal fascial strength, which increases when stretched in a bOw forward and up toward the top of the head. The standard model of biomechanics relies on abdominal muscle contraction to strengthen the belly area instead of using the criss-cross structure of the abdominal fascial bands.

Bowed Belly — Long and Strong



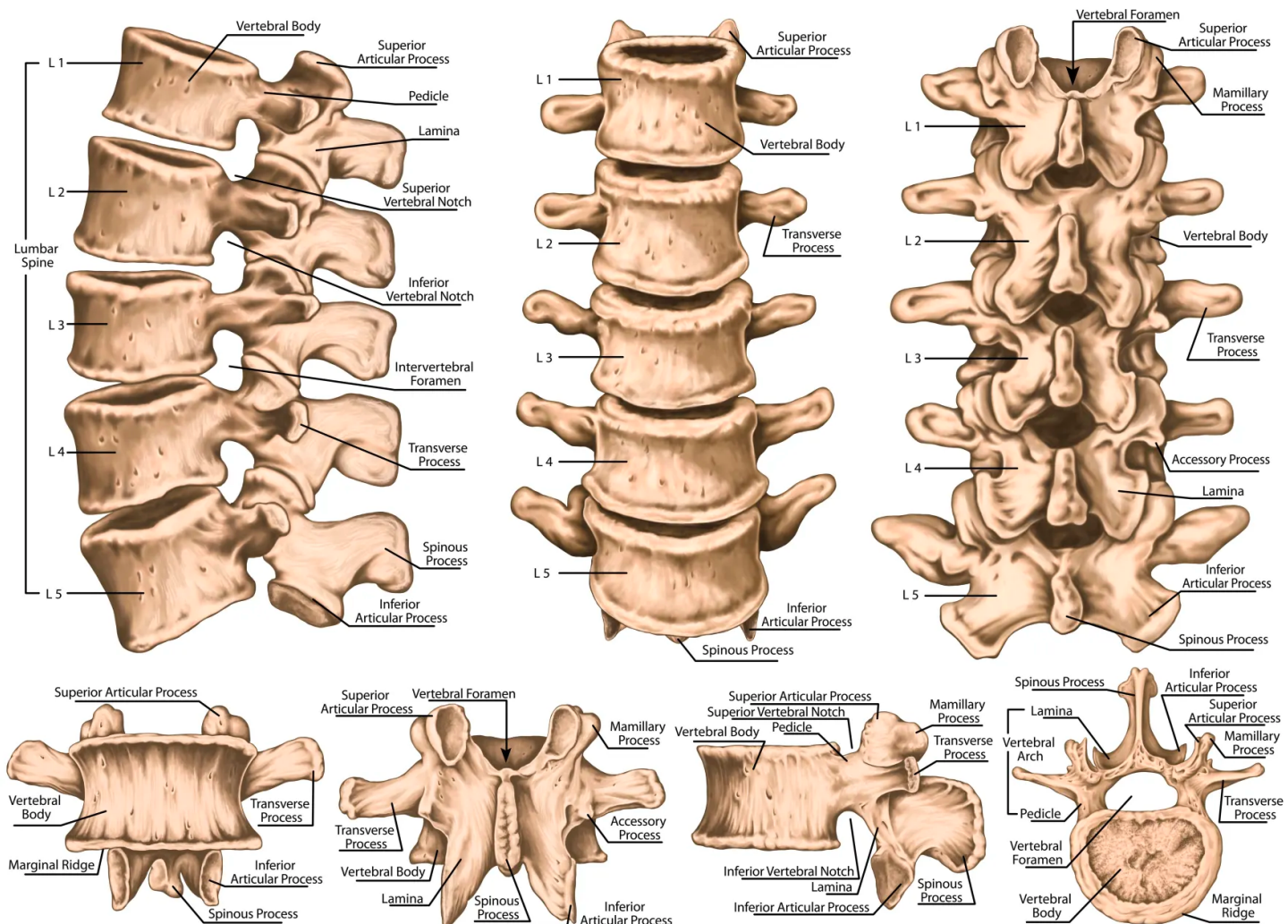
In the Bowspring method, the belly is strengthened, not through contraction, but by bOwing forward and up towards the top of the head. With the hips behind the ribs in a dynamic neutral alignment, the bottom of the belly is drawn backward while the rest of the belly is stretched forward and up to gain maximum length. In this curved alignment, the longer and more open the belly, the more the criss-cross of the fascia in the belly will tighten and increase in tensile, functional strength. Like with Chinese finger traps, the more one pulls the two ends away from each other, the tighter the spiral weaving becomes around the fingers. The longer the belly in this curved alignment, the more the belly tapers in on the sides of the waist. Although the belly is not flat, and is actually more bOwed, it is very strong. So, the Bowspring belly is long and strong, which is counter to the standard model for abdominal strength.



Lumbar Vertebrae

On the backside of the waist area is the lower back, which includes the sacrum and the lumbar vertebrae. The sacrum is a triangulated section of 5 fused vertebrae below the 5 lumbar vertebrae. The 5 lumbar vertebrae are universally formed in wedge-like shapes that connected together to form a smooth curve in the lower back. The inward curvature of the lumbar vertebrae is a lordosis or a concave shape of the lower back.

Most chronic lower back pain stems from a compression in between the lumbar vertebrae. The spinal discs, composed of elastic cartilage and fluid, are inordinately compressed from postural misalignment often to the point of herniation or rupture, causing intense nerve pain and damage. This harmful misalignment is typically not from hyper-lordosis or excessive inward curvative, but is caused by a consistent flattening of the natural lordosis while sitting, standing, walking, and doing other normal functional activities through the day. Unfortunately, the designated authorities of mainstream biomechanics continue to advocate for opening and lengthening the lower back through forward bends and “core strengthening” - abdominal exercises. Until we challenge the scientism of mainstream postural alignment, this travesty will persist.

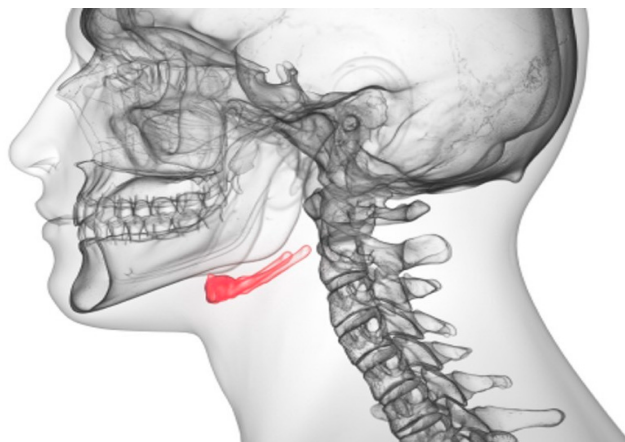


The Neck



The neck is the top portion of the spine that connects the head with the ribcage and torso. It is the most mobile section of the spine, and it is able to bend forward and backward, arch right and left, and twist side to side. The cervical spine's full range of motion is approximately 80° to 90° of flexion, 70° of extension, 20° to 45° of lateral flexion, and up to 90° of rotation to both sides.

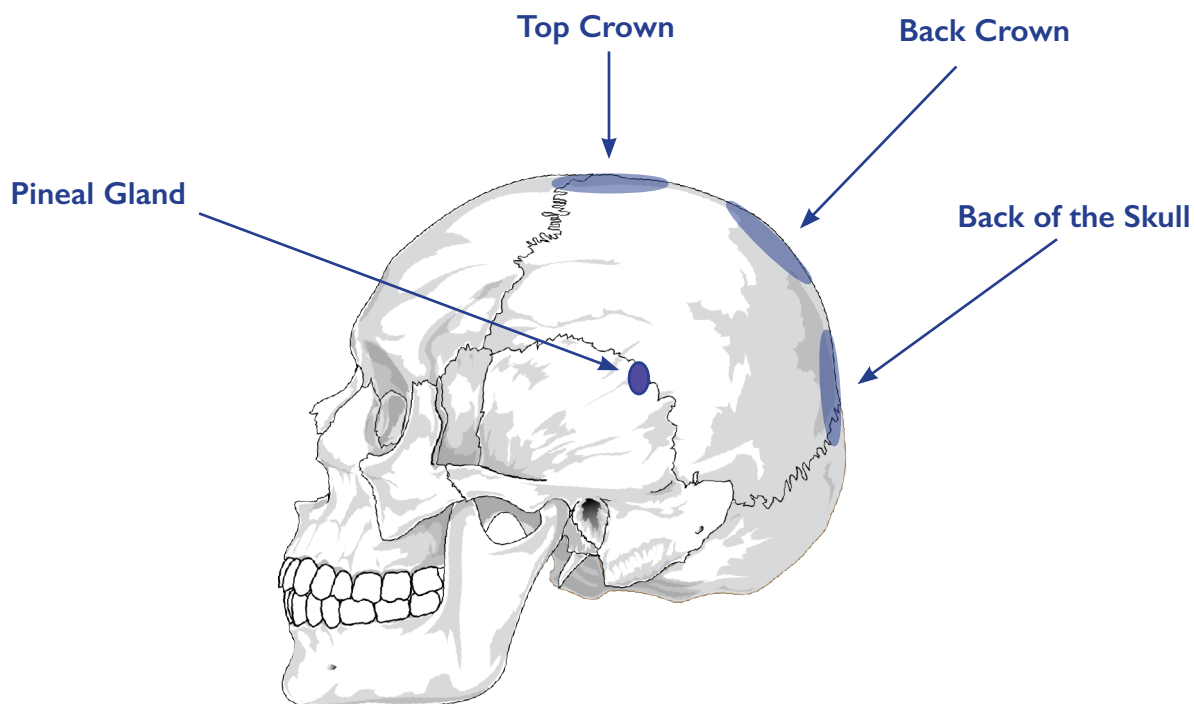
The cervical spine is composed of 7 vertebrae that, like the lumbar spine, are lordotic in their inward curvature. The throat on the front of the neck, similar to the belly, is primarily structurally supported by myofascia, not by bone. The only bone in the throat area is the hyoid, which is U-shaped and positioned at the root of the tongue, between the lower jaw and the largest cartilage of the larynx. The primary function of the hyoid bone is to serve as an attachment structure for the tongue and for muscles in the floor of the oral cavity. The hyoid is the only bone in the body that does not directly articulate with any other bone, and it is a great example of a floating tensegrity strut in the emergent biomechanics of the Bowspring.



The Crown

The 5th subsystem in the Bowspring method is the Crown, which is the head and its parts – face (forehead, eyes, nose, ears, mouth, jaw, chin, etc.), top crown, back crown, and occiput. In terms of the whole body and the other 4 subsystems (Heart, Wings, Roots, and Apple-Cores), the Crown is at the top and represents the geometric pinnacle part of the mind-body structure.

The Crown contains the most complex parts of the central nervous system and the brain. The general directionality of the evolution and growth of the body is from the roots up towards the head. The brain also reflects this spatial geometry as it spirals from down to up; back to front; and out to the right and left sides through time in its biological development. It grows up and forward from a reptilian, primitive brain stem through a mammalian core in the center and out to a human cortex, filling the cranium with a mass of highly complex brain filaments. The pre-frontal cortex is enlivened with advanced brain wiring for highest expressions of the human embodiment – compassion founded in wisdom, imagination, and high emotional intelligence (high-level executive function), free-thinking, independent choice toward the Good. The front top of the brain curls and spirals back into the center of the head, the abode of the higher mind. In the center of the head is the pineal gland, a key part of the neuro-glandular system which regulates the diurnal biological function throughout the body by the processing of light. Our body's healthy physiological pulsations are in rhythmic concordance with day and night, light and dark, and with the annual seasons. Melatonin is secreted by the pineal gland which helps us to sleep and rejuvenate on a nightly cycle. The pineal gland also naturally produces the incredible chemical – DMT which gives direct experiences of higher realms of consciousness.



Common Head Alignment

Compared to a primate, humans have a flatter face. However, attempting to align the head and neck by bringing the face more vertical creates misalignment. Yet, bringing the jaw downward to vertically align with the forehead commonly occurs as an unconscious self-adjusting alignment. Notice how this occurs when someone poses for a photo when looking into the camera or when they look at themselves in a mirror. It is common unconscious postural habit to pull their chin down and back, and to then look out through the top of their eye sockets.

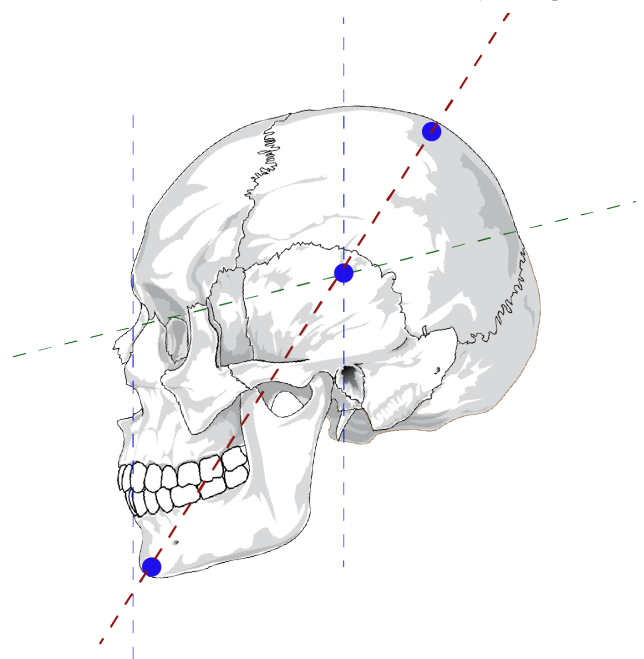
Culturally, it is a common to social courtesy to bow the head slightly and to lower your eyes when approaching a stranger. In contrast, in some cultures it is considered bold, aggressive or rude body language to have your head upright with the throat wide open while looking straight into a stranger's eyes.

In terms of body language, flattening of the face, i.e. pulling the chin down and back can reflect the following psycho-emotional attitudes:

- Demure, shy, modest, reserved, non-confrontational
- Discouraged
- Insecure, unsure, highly cautious
- Submissive, lack of self-worth
- Daydreaming

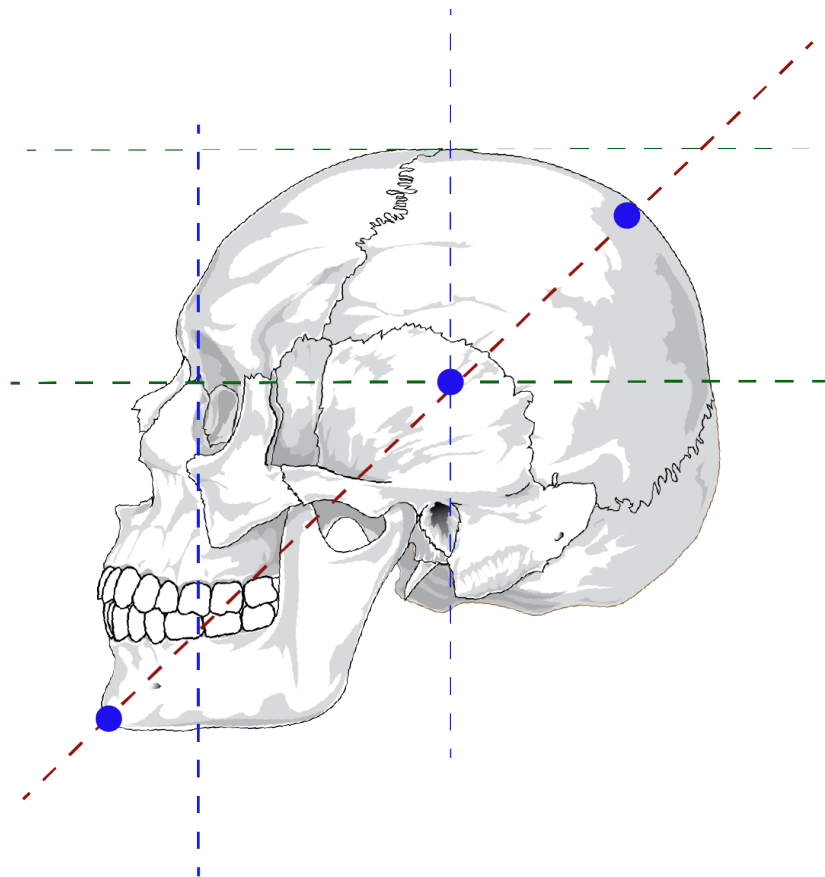
The standard model alignment is for the head is to be vertically aligned over the torso, hips and feet when standing. The head is directed to extend upward to fully elongate the back of the neck. In this alignment the back of the head extends up more than the front of the head, and so the throat tends to shorten and the jaw tightens. In this common position the eyes look out more from the top of the eye socket than the bottom.

In the closed somatic posture when someone is distressed, the head is tipped heavily forward and down with the throat shortening and the jaw tightening. The forehead is in front of the chin and the eyes are often cast downward. As the top of the head moves forward and the chin tips downward, then the hollowed curve at the back of the neck and head diminishes and eventually turns into a mound. The more the head bows forward, the more the neck flattens and the back of the neck rounds in the C-Curve. Consequently, the flatter the neck, the tighter the jaw becomes.



Bowspring Head Alignment

When sitting or standing in the Bowspring, the dynamic neutral alignment for the head horizontally aligns the mouth – the upper and lower rows of teeth, and upper palate so they are level with the earth. Additionally, the eye sockets are vertically aligned. The back of the head and the chin lift up at the same rate, which creates a diagonal vector (45-degrees) from the front tip of the chin up to the back crown of the head.



ABCs of the Crown:

A: Establish a natural inner inflation of the head to allow the Central Channel to open upward from its base. Softly dilate the head inside wide through the ears. Bring the eyes to take a wide peripheral view of the horizon. Softly smile to create width in the mouth and jaw.

B: Press the head up and back from the chin to the back crown in order to engage the back of the neck and to strengthen the engagement of the whole posterior chain of myofascia. Hollow the upper palate of and press it upward.

C: Extend upward through the top of the head to maximize the length of the Central Channel. The direction of evolution is up and forward from base of the skull to the upper front of the skull.

The Scientific Wonders of the Bowspring

In early 2012, once Desi Springer blew my mind with her new alignment ideas I went down a rabbit hole of new scientific findings in fascia -- triple helix molecular self-organization, thixotrophy, visco-elasticity, and biotensegrity, trying to understand the rational basis of the Bowspring. Additionally, the liquid mechanics of fascia helped to explain how the Bowspring alignment was so effective in simultaneously increasing power and agility while reducing excessive effort during normal daily activities and regular postures. At the same time, the curvy, wavy, dynamic alignment was antithetical to the standard model of biomechanics, compelling us to re-evaluate the foundational ideas of what we had been taught for so many years as the inarguable science of how the bones and muscles work together.

One important realization that we had, as we tried to understand how the two contrary alignment system could both be valid and true, is that the standard model of biomechanics is oriented toward static posture, whereas the new emergent view that embraced the power of fascia was based on dynamic posture or functional movement. For a resting, static, comforting position, the standard model linear, compressive structure Newtonian physics is valid, while for improving athletic performance, a wavy, non-linear, fascia-based postural alignment is valid. Static and dynamic postures have opposite functionality and therefore must inherently have very different alignment and form. Applying standard model static alignment principles to a functional movement will regrettably increase and accelerate physical degeneration over time. Therefore, a paradigm shift in biomechanics is needed now to help prevent further unnecessary harm caused by misapplying the static model of alignment to dynamic posture.

in 2013, after a year of research and development of emergent ideas in biomechanics, focusing on curvy, dynamic, and somatically open postural alignment, Desi and I launched the Bowspring method and began teaching it on a daily basis to students at Desi's Denver, Colorado yoga studio, and then in workshops in North America and Europe. Over the next 6 years, we shared the radical alignment ideas of the Bowspring with hundreds of students in 17 countries. We trained over 100 teachers worldwide to pass-on the Bowspring method to dozens of their students. With each student we apply the exact same alignment algorithm -- the same sequence of actions and alignments to create the Bowspring template. With a consistent application of the algorithm since 2014, we have been able to observe and gather very useful information from thousands of students globally in their experience of learning the Bowspring. Whatever in the methodology we find does not enhance therapeutic effect or athletic performance, we discard. And at the same time, we continue to explore and test every aspect of our wavy alignment model to optimize it in terms of postural tensegrity.

After 9 years of applying the Bowspring alignment method to a wide variety of students -- from children to elders (101 years old is the oldest), and from the chronically injured to athletes, we have been able to refine the basic exercises to be highly beneficial and effective in improving mind-body health for any level of students. With a precise and well-defined formula for postural tensegrity and healthy biomechanical alignment, we can accurately predict the mind-body effects of applying the Bowspring alignment to any normal posture or common functional movement. Although we expect the mainstream to continue to resist replacing the old alignment paradigm with an emergent wavy, dynamic postural system like the Bowspring method for some years to come, we know that the truth will eventually be revealed, based on direct experience with its life-enhancing results.