The Asymmetric Pelvis

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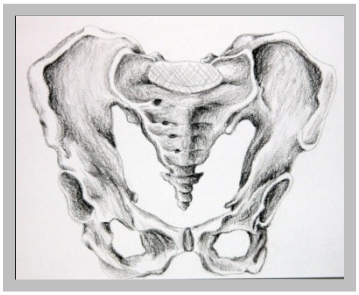


Very rarely are both the left and right sides of the body the same. In Structural Integration we often ignore these side-to-side asymmetries by working the same way on each side of the body. We need to learn to customize our work to each person's unique asymmetries. This is very important with the pelvis. Because the torso relies on the pelvis for its support, asymmetries here have disorganizing consequences for the torso. Spinal curvatures are predictably consistent with asymmetries in the pelvis. With the extensive fascial connections between the femurs and the pelvis, any asymmetry in the pelvis will also have predictable correlates in the fascial organization of the legs. This article describes the possibilities of asymmetry as they can be assessed and reorganized at the pelvis. There are correlates to these patterns everywhere else in the body. But, a similar description of these corresponding asymmetries would be too extensive for this article. The following is a brief description of the possible patterns that the pelvis can have. There is a description, also brief, of which fascia that must be addressed to change the patterns.

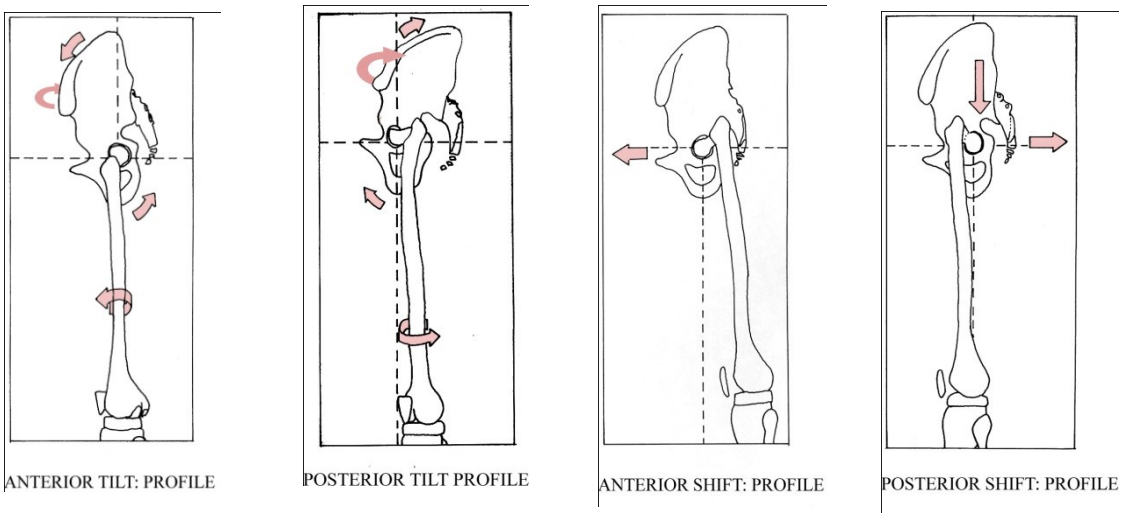
It is always the case in Structural Integration that we must deal with patterns in the whole. The connective tissue matrix shapes its entirety to any particular anomaly. At some point, particularly with long held patterns, it is not that important to know which part of the body misaligned first. An argument can be made for considering the pelvis as primary for our work for two reasons. First, just practically, it is easy to assess asymmetries in the pelvis. The bones are large and, because it is a cornerstone, of sorts, in the structure, misalignment here seems to broadcast well through the rest of the structure. Secondly, because so much of the body's mass rest above the pelvis and is transmitted through here to the relatively small bones of the legs, there are a lot of fascial structures attached to the pelvis. All of these structures are directly and significantly impacted by pelvic position.

Because the demands for support and transmission are so extreme and extensive at the pelvis, any misaligned fixations in the fascial matrix here can be quite intense and require a good deal of very accurate work. The important principle in working with asymmetries is that they have to be worked asymmetrically. That is, something different has to be done to the fascia on the left than is done to the fascia on the right. If we work with asymmetrical patterns symmetrically, the asymmetry will not improve. In fact, the asymmetry will probably increase. We may get a longer, softer, more fluffed up structure, but the asymmetry will not be corrected.

Tilt and Shift in the Pelvis

There are two positional possibilities that are important in pelvic girdle alignment and function. One is tilt, which is the rotation of an innominate (hip) bone either anterior or posterior around and along the transverse (side-to-side) axis. In anterior tilt the front of the innominate will move inferior and anterior while the back moves superior and lateral. The ASIS will move forward and medial while the ischial tuberosity moves posterior and lateral. In posterior tilt the front of the innominate will move

upward and lateral while the back will move downward and medial. The ASIS will move backward and lateral while the ischial tuberosity moves forward and medial.



ANTERIOR TILT: PROFILE

POSTERIOR TILT PROFILE

ANTERIOR SHIFT: PROFILE

POSTERIOR SHIFT: PROFILE

The second positional possibility for an innominate is shift, which is the movement of an innominate anterior or posterior along the sagital (front-to-back) axis. The shift of an innominate is always relative to the position of the femur. So, in anterior shift the innominate will be more anterior than the femur along the sagital axis. In posterior shift the innominate will be more posterior than the femur.

Tilt and shift can be found in any combination within an innominate. That is, an innominate can have either anterior tilt (AT) or posterior tilt (PT) with either posterior shift (PS) or with anterior shift (AS). Because of the alignment of the hip joint, sacrum function and alignment through the leg, certain arrangements of tilt and shift are more functional than others. The opposite-direction arrangements, AT/PS and PT/AS, provide a greater range of motion for the hip, normal function for the sacrum and spine and better alignment throughout the leg. The same-direction arrangements, AT/AS and PT/PS create abnormal alignment in the hip, abnormal function for the sacrum and spine and misalignment throughout the leg.

There can be symmetrical pelvis patterns of tilt and shift. That is both hips having the same arrangement of tilt and shift, either functional same-direction or dysfunctional opposite-direction. There are plenty of reasons to work with symmetrical patterns to bring about more optimum integration. Much of the information in this article can be applied to symmetrical tilt/shift patterns.

It is, by far, most prevalent to find one innominate in a different arrangement of tilt and shift than the other. This is what an asymmetrical pelvis is – the left and the right innominates are aligned and are functioning differently. Equilibrium, as well as the structures that produce tilt and shift, dictate that each innominate in an asymmetrical pelvis will have the exact opposing tilt and shift arrangement. They will be also be exactly opposing in their degrees of tilt and shift. The only time this will be found differently is within hours after a severe accident, while the structure has not yet had time to realign itself for optimum anatomical function and balance with the gravitational field. So, in an asymmetrical pelvis, if one innominate is AT/PS, the other will be PT/AS. If one innominate is PT/PS, the other will be AT/AS.

These arrangements will also be opposite to the same degree. If the AT/PS is slight on one side then, the PT/AS will be slight on the other, if extreme on one side, then extreme on the other. This is also true within an arrangement of tilt and shift. If there has been an injury producing an extreme tilt of one innominate, then the shift of that innominate will also be extreme. The tilt and shift of the opposing side innominate will be just as extreme.

This means that all of the pelvis, and really, the entire body, will match the alignment of the most extreme injuries. With several injuries, the positions must compromise one another. This seems to be how the more dysfunctional same direction arrangements (AT/AS and PT/PS) come about. Once again, it is important to realize that the disorganizing injuries that are expressed in the pelvis are not always to the pelvis. The pelvis may be adapting to injuries elsewhere in the structure. The reasons for the focus on the pelvis are, one, because asymmetries are relatively easy to assess here, and because the functional and structural nature of the pelvis requires that asymmetrical fixations become fairly fixed here.

These are photos of persons with different sorts of asymmetrical patterns. Figure one is a woman with pelvic asymmetry who has functional opposite-direction tilt/shift.

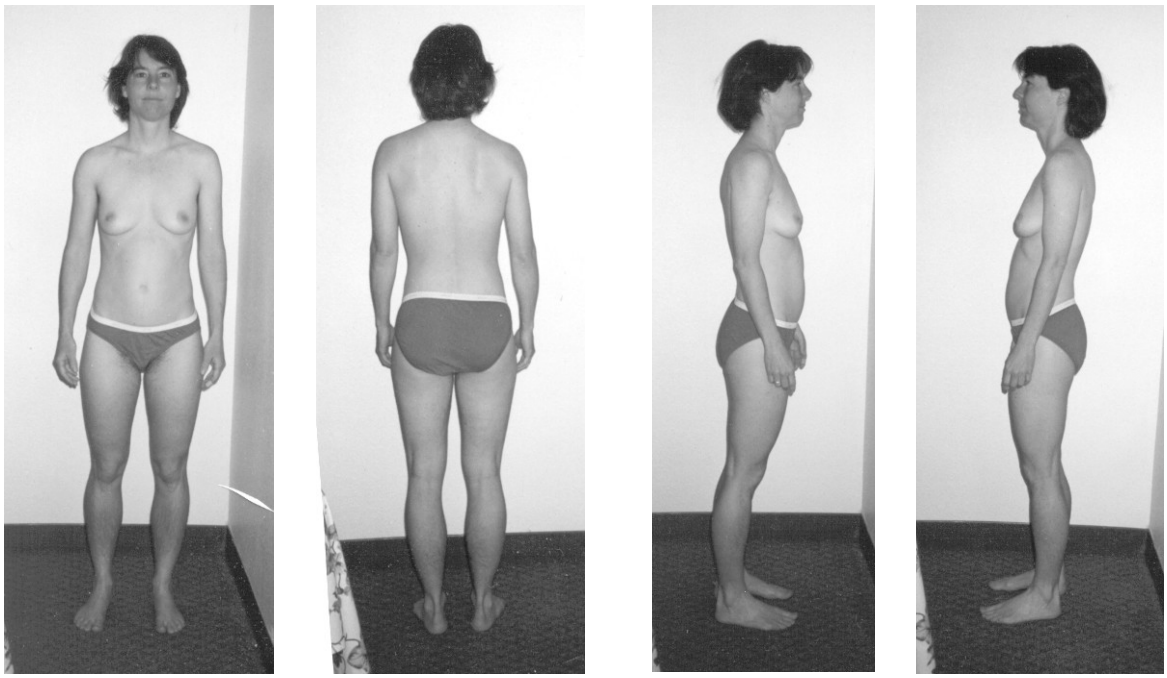


Figure 1 – Asymmetric opposite-direction tilt/shift pattern

Pelvis – Right PT/AS, Left AT/PS

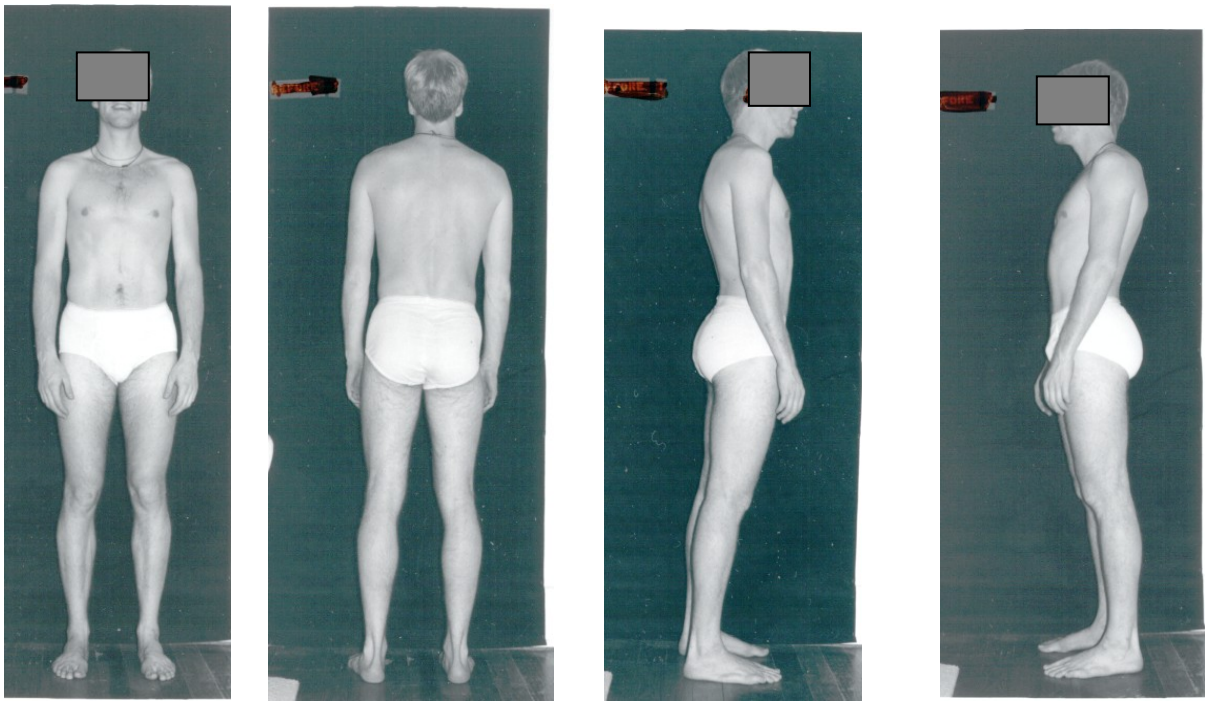


Figure 2 – Asymmetric same-direction tilt/shift patterns

Pelvis – Right AT/AS, Left PT/PS

Anatomy of Tilt and Shift

A central goal of Structural Integration is to bring a person's line of support into the core tissues. This is where the intrinsic, slow-twitch, tonic muscles are. These muscles live on oxygen and can hold on all day long with out getting fatigued, inflexible or shortened. When there is structural disorganization, there is a lot of dependence on the extrinsic, fast-twitch, phasic muscles. These muscles were designed to contract and release in movement. They live on glucose. When they are used as support structures and forced to stay on all the time, they get very fatigued, shortened, and hardened. When the extrinsic tissues are used for support the motion at the joints is restricted and deformed. One of the primary structural situations that leads to a loss the core line of support is left-to-right asymmetry. This is a very prevalent structural dysfunction. It runs from slight to extreme. Scoliosis is an example of extreme asymmetry. But, it is rare to find someone who does not have some left to right asymmetry. This could be because misaligning injuries are rarely symmetrical.

With the various patterns of tilt and shift there are predictable places in the pelvis where core function is lost and extrinsic support is being utilized. Below is a list of the myofascial tissues that are involved in the actions of tilt and shift. Most of these tissues are associated with muscles that are primarily tonic, slow twitch muscles. The content of slow- or fast-twitch fibers in a muscle is a ratio that can vary from person to person and from one area of a muscle to another. For more information on this phenomenon Robert Schleip of the European Rolfing Association maintains a web site that has information on research into this and many other issues relevant to Structural Integration. See it at www. somatics.de. A muscle that is designed to be a core stabilizing muscle is always predominately slow-twitch or tonic. In the list below these structure are in italics. Other structures, which are usually fast-twitch or

phasic, are listed in plain type. When there is a fixed asymmetric pattern even these phasic structures will have a decrease in their capacity for rapid, fast-twitch firing because they are being inordinately used for stabilizing support. As well, when these usually phasic structures are being used in more tonic roles, it is in areas near to the structures that are contributing to the fixed tilt and shift.

In fixed anterior tilt there is an over reliance on the anterior and medial leg and pelvis for support and stability. So these structures, usually phasic, will be shortened and too dense and hard to allow optimum movement. With fixed anterior tilt, the structures of posterior tilt will be more unused and will be more elongated and flaccid. In fixed posterior tilt this will all be the reverse. With fixed anterior shift, the structures listed will be shortened and atrophied because they are not being utilized for core support. With anterior shift the structures of posterior shift will be elongated and well developed. In fixed posterior shift the pattern will be reversed.

Anatomical contributors to pelvic tilt and shift. In asymmetric patterns, these will only be active on the same side of the particular tilt or shift. For example, the gluteus maximus is listed under anterior shift. If there is a left side anterior shift only the gluteus maximus on the left side will be shortened and atrophied.

Anterior Tilt

psoas, medial & mid portions
adductor longus
adductor magnus, anterior portions
gluteus medius & minimus
gracilis – less in AT/AS
levator ani, anterior portion
internal obliques
quadriceps, upper in AT/PS
lower in AT/AS

Anterior Shift

quadratus femoris – less in AT/AS
gemelli
obturator internus & externus
iliotibial tract, posterior half
piriformis – in AT/AS
gluteus maximus
plantar flexors
plantaris, tibialis posterior,
flexor hallucis longus,
gastrocs & *soleus*
plantar aponeurosis

Posterior Tilt

Hamstrings, upper in PT/AS,
lower portions in PT/PS
adductor magnus, posterior portion
psoas, most lateral portion
levator ani, posterior portion
external oblique

Posterior Shift

pectineus – less in PT/PS
iliacus
tensor fasciae latae
iliotibial tract, anterior half
popliteus
dorsi flexors
extensor halucis longus,
extensor digitorum longus,
tibialis anterior
extensor digitorum brevis
adductor brevis – in PT/PS

With the above list of anatomical contributors, it is important to make the fundamental distinction that Structural Integration works with the connective tissue matrix not the muscle fibers. It is the matrix associated with these structures that will need be addressed and transformed to correct these fixations. The connective tissue matrix within a muscle gives the muscle fibers their form and position in the body. In addition, there is a multitude of layers of connective tissue around and between the muscles that contribute to the fixations and this associated fascia needs to be changed. Indeed, at the origin and insertions of the structures and in the wrapping around joints there is an abundance of connective tissue that facilitates stability and becomes patterned with the fixations of tilt and shift. In other words, the list of muscles is used to give a language for the relevant position and direction of the fixations. But, in addition to the connective tissue that is directly involved with the muscle fibers of these muscles, there is a good amount of connective tissue in these areas that needs to be addressed in order for the fixations to be released. The anatomy of the muscles gives us important information about the location of the fixations and the predominate direction that the connective tissue fibers will be running so that our work can be more accurate and effective. It is always important in Structural Integration that we remember that it is the connective tissue matrix, as a whole, that determines each structure's unique shape and balance with gravitation and which we must address to transform and evolve that shape and balance.

Working With Asymmetries

When working with asymmetries, there are always some parts of the structure that we want to be careful to not further open or lengthen. This is always the fascia that is opposite to the fascia contributing to the fixed tilt and shift. So, when working with asymmetries, we need to know what tissue to change and what tissue not to change. The tissue not to change in a posterior tilt is the tissue associated with anterior tilt and, vice versa. The tissue not to change in posterior shift is the tissue associated with anterior shift and vice versa.

There are a few pointers for working with this shortened and atrophied fascias that create tilt and shift patterns. Because these structures are so short, they are often hard to contact. For example, the pectineus fascia on the posterior shift side of the pelvis is often no more than one centimeter long and a few millimeters thick. While on the anterior shift side the pectineus can be several centimeters long and a centimeter or more thick. Care needs to be taken to reach deep enough to contact these small, thin structures. Once this tissue is contacted it needs to be lengthened by working along the length of the fascia, that is, from origin to insertion and the reverse. Cross fiber work is not helpful because the structures tend to contract further. Working along the length of the tissue, the intention needs to be for lengthening the fibers and in spreading or "fluffing up" the layers. This type of work will have the results of lengthening and opening the structures so that they can begin to be used in both concentric and eccentric contraction. Creating length and depth in this tissue also allows the redevelopment of circulation and neural activation in these areas. There does seem to be a loss of neural response in these atrophied areas as, even with the increased pressure and repeated manipulations required, the client does not often express discomfort. Indeed, it is often the opposing structures where pain is experienced, both with contact and on a chronic basis. This

could support the view that one of the contributors to chronic pain in a specific area is over use.

There are other refinements that can be discovered when working with pelvic asymmetries. One, there needs to be an intention of moving the pelvis toward symmetry. Care needs to be taken to not overwork the tilts and shifts. There is a very real possibility of creating the opposite asymmetry with over work. It can be a surprise how easily the structure is transformed when working accurately on just the tissue that needs to be changed. It is usually wise to change things just a little and have the client get up and walk around, do some assessments and see what more might need to be released. Also, there are some significant differences in the location of the primary shortness in the same-direction patterns versus in the opposite-direction patterns. Some of these differences are alluded to in the lists of anatomical contributors. For instance, the quadratus lumborum contributes to posterior shift when paired with anterior tilt. But, with posterior shift with posterior tilt, it will be the piriformis. Finally, all asymmetries will need the support of client education to transform the movement patterns and ways of embodiment that supported the asymmetry. This can include gait training, asymmetric stretches and strengthening exercises.

This Article was originally published in the 2004 Yearbook of the International Association of Structural Integrators. It has been slightly edited and revised since then.