

Your Spine Is Not a Column

An Excerpt from *Your Body Mandala*

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ABSTRACT *In this article, which is a chapter excerpted from Your Body Mandala (2018), Mary Bond explores the nature of the human spine, the evolutionary journey that led to the various movements capable by the spine, and the variability of shape observed within individual spines. Bond describes the sacrum clock movement exercise and how to visualize accessing the movement of the coccyx.*

Editor's note: This article is an excerpt (Chapter 9) from Mary Bond's book Your Body Mandala (2018: MCP Books, Maitland, Florida, reprinted with permission). We have made modifications for our journal style.

The concept that the spine is a column stems from the mechanical model of the body. In fact, your spine functions like a tensegrity tower – it is more akin to Kenneth Snelson's Needle Tower in Washington, D.C., than it is to the Washington Monument (see Figure 1).

Your vertebrae are suspended in your fascial matrix like a string of pearls, not stacked up like blocks. Fascial tissues weave in and around the spinal segments, securing them, but also holding them apart. This prevents the vertebral bodies from bearing down upon one another and causing erosion. The 'pearls' are more or less mobile, depending on the elasticity of the fascial weaving.

The subtle lengthening of your spine that you feel when you inhale gives you a sense of the labile nature of your spine. If you haven't been able to feel that as yet, this chapter should help.

Evolutionary Journey

In a healthy spine, the vertebrae are configured into shallow forward and backward curves (see Figure 2). It's a commonly accepted hypothesis that these curves are a product of life's evolutionary journey from sea to land some 450 million years ago. The assumption is that primitive fish moved in the same way as modern fish, with a sideways undulation of their spines (Gracovetsky 1988). This sidebending is a movement your own spine does whenever you reach one hand above your head – to change a light bulb, for example.

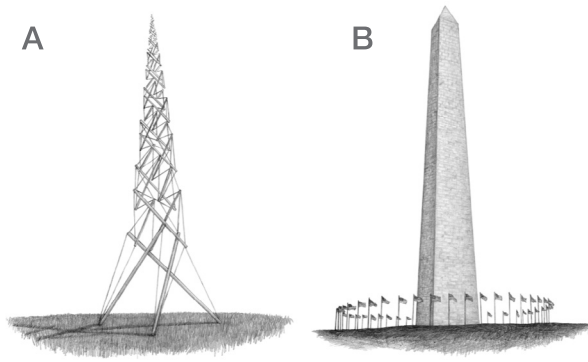


Figure 1: Your spine is more like a tensegrity tower (A) than an obelisk (B).

When our hypothetical fish first emerged from the oceans, they had to plant their fins into the mud in order to lift their bodies over pebbles and other obstacles. This lifting involved rotating their spines. The combination of sideways undulation with the new axial rotation gave rise to forward and backward movements. (You can feel this for yourself: if you bend your torso sideways and then twist, one side of your spine will be subtly flexing and the other side extending. The more you flex or extend, the farther you will be able to rotate. This is known as *coupled motion of the spine*.)

Over the eons, as creatures ventured into varied terrain, they developed increasingly adaptive structures – limbs and paws to gain better purchase on the ground, hips and shoulders for additional power. Evolution of a spine capable of flexion, extension, and rotation in addition to sidebending, plus the development of sophisticated limbs, allowed complex movements such as clambering across rocky terrain and swinging through forest canopies. Or belly dancing. Or golf.

Or walking. When our bodies have tensional integrity and healthy, resilient fascia, our spines, pelvises, legs, and feet all subtly rotate in order to move us forward. You begin experiencing this in the *foot and spine spirals* practice in Chapter 8 [of *Your Body Mandala* (Bond 2018)].

Echoing the evolutionary path to uprightiness, the individual human spine makes a developmental journey. Before birth, your spine was curved in a C shape. When, a few months after birth, you grew strong enough to lift your head, you built the backward curve of the *cervical* or neck vertebrae. By struggling to sit up, you strengthened a second backward curve in the waist or *lumbar* area. The four-legged movements of crawling and creeping were similar to the movements of creatures as they evolved from sea to land. Once standing, the curves in your spine helped absorb the impact of your feet striking the ground.

The spinal curves are normal and necessary. They enable you to move in all three planes. When you flex or extend, you're moving in the sagittal plane. When you twist and turn, you're moving in the horizontal plane. When you rock from side to side, you're moving in the coronal plane. Thus, unlike a fish, you're capable of movement in three dimensions. This adaptability of the human spine lets you function in the field of gravity. Whether you're hiking over mountain scree, playing tennis, or dancing a tango, the relationship between your adaptable spine and your adaptable feet gives your body its sustainability and grace.

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Spinal Mobility

If a medical professional applies the terms *kyphosis* or *lordosis* to you, don't worry. These are words used to describe *normal* spinal curvatures (see Figure 3). Kyphosis indicates the natural forward curve or slight flexion of your thoracic spine. Lordosis describes the backward curves or slight extension of your neck and lower back. Curves in the spine are problematic only when they're not adaptive – when they can't curve into the opposite direction. For example, a *thoracic* kyphosis that has become encased in stiffened fascia would be unable to extend and rotate. A movement such as reaching for something behind the body – into the back seat of your car, perhaps – could strain the spine. Even more likely, the spinal stiffness would cause the shoulder to overstretch, injuring the shoulder. To prevent that happening again, you'd need to improve the mobility of your spine.

The base of your spine, the triangular-shaped *sacrum*, is moored between twin pelvic bones. Although this makes the pelvis look solid, it is anything but a stable platform. Not only can the pelvis twist within itself, it is poised over two round knobs, like ball bearings, at the hip joints. When unrestricted, the hips allow considerable rocking and swaying of the pelvis. This built-in instability of the lower half of your body is what lets you freely move about. Your spine should be adaptable enough to respond to the mobility of your hips, legs, and feet.



Figure 2: The curves in your spine are natural and necessary. They contribute to your spine's springiness.

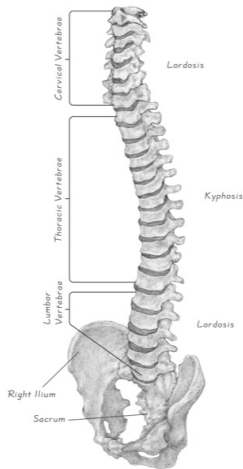


Figure 3: The cervical lordosis, thoracic kyphosis, and lumbar lordosis curvatures pictured with the sacrum and ilium.

Mobilizing the Spine's Foundation

The practice in this chapter contributes to improved mobility between the lower vertebral segments and your sacrum, and between the sacrum, the pelvis, and the hip joints.

You'll start at the base of the spine, heightening awareness of the way the sacrum can articulate with its neighboring pelvic bones, the *ilia*. Through this practice you restore mobility to the pelvis and facilitate greater freedom in your hip joints. You begin to sense the elasticity present within your pelvis, and the fascial connectivity of your pelvis, legs, and spine.

Take plenty of time – weeks rather than days – to explore the sequence of practices in this chapter and the next. Each one offers you improved self-support, adaptability, centeredness, and grace.

Sacred Bone

Your sacrum and ilia rest against one another at the *sacroiliac joints*. The ilia swivel back and forth with every step. Although the amount of rotation at the sacroiliac joint is tiny, it can make a big difference in the capacity of the pelvis to convey helical motion between the legs and spine while you're walking.

Your sacroiliac joints are capable of moving back and forth about two to four millimeters. Although this movement is minute, it is essential for fluid motion of

the lower back and pelvis. The exploration that follows brings awareness to your sacroiliac joints and encourages normal movement there. The practice is an adaptation of an exercise borrowed from the Feldenkrais Method®. Dr. Moshé Feldenkrais, a contemporary of Ida Rolf, PhD, founded a gentle and effective system of movement rehabilitation. His approach utilizes brain plasticity through targeted awareness to restore optimal body organization (Feldenkrais Guild® of North America 2022).

Practice: Preparation for Sacrum Clock

For *sacrum clock* you will need to lie on the floor with your knees flexed at right angles and the soles of your feet resting on a wall. If your upper spine is rounded, place a small lift under your neck and head to keep your airway free.

Lie close enough to the wall that your thighs can be vertical. Position your feet hip distance apart. Scoot them upward about an inch, until your toes are resting just above the level of your knees. Spread your toes apart from each other. Let the pad of each toe make contact with the wall.

Positioning your feet may have brought some tension into your legs. Take a moment to relax your calves while keeping mindful contact of your feet with the wall. Let your feet be *touched* by the wall. Imagine vectors that project from the tops of your shins to the ceiling. These imaginary cables will help your legs relax in this position.

Extend your upper arms outward in line with your armpits. Bend your elbows so your forearms are at right angles with your upper arms. Your arms make the shape of a goalpost on a football field. The backs of your hands rest on the floor. (If your hands don't reach the floor, place folded towels beneath your forearms and hands. The props will make it easier for your shoulders to relax and your chest to expand.)

Allow a slight backward curve or lordosis in your lumbar spine. There will be a tiny puff of air between the floor and your lower back. This is your *neutral lumbar curve*.

Position your head so your eyes gaze straight up at the ceiling. This establishes a neutral curve in your neck. Do not press your neck into the floor to make it straight.

Each time you inhale, feel your upper chest widening – your armpits seem to move apart from each other. When you exhale, let your spine, legs, and head settle ever more deeply into the ground.

As your armpits spread apart from each other, your two elbow points also expand sideways. Each inhalation lengthens the horizontal vector between your elbow points. Gently sustain that expansion as you exhale, and let your head and spine sink deeper into the floor between your elbows.

This breathing practice broadens your back and helps create space for freer movement in your spine.

Sacrum Clock

For this practice, you will imagine a clock face on the front surface of your sacrum. The top of your sacrum is 'twelve o'clock'. Your coccyx is 'six o'clock'. The center of the clock is the neutral resting place for your pelvis (see Figure 4). When your pelvis is neutral, there will be a slight gap between your lumbar area and the ground. There will also be a sense of spaciousness between your coccyx and your sit bones. Look at the illustration of the pelvic floor (see Figure 5). Your coccyx and sit bones border an area called the posterior or *anal triangle* of the pelvic floor. It is behind your perineal point. Try to keep this area spacious during the upcoming practices.

Practice: Sacrum Clock

Lie with your feet on the wall as before, but this time place the palms of your hands on

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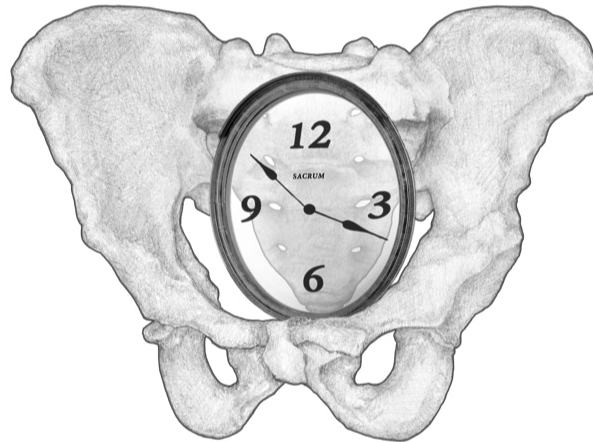
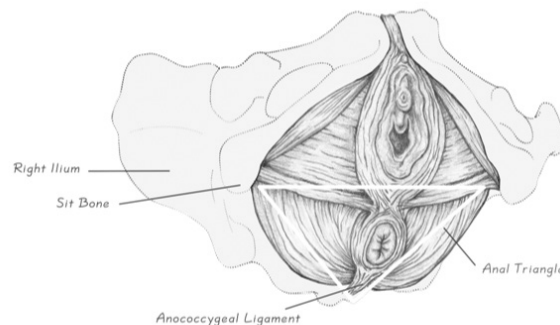


Figure 4: Imagining a clock face on your sacrum helps you release and balance your sacroiliac joints.

Figure 5: Spaciousness of the anal triangle of the pelvic floor facilitates the best angle for the sacrum, and thereby contributes support for the spinal curves above.



the tops of your thighs just above your groin. Your upper arms will be resting on the floor close to your sides.

Gently press your feet into the wall. As you do this, let your sacrum tip back toward twelve o'clock. Your neutral lumbar curve will flatten a little. Soften your abdomen and imagine your internal organs resting back into your lumbar area as if into a hammock.

Now, relax the pressure of your feet and let your sacrum return to a neutral place, at the center of your clock. Notice whether the anal triangle of your pelvic floor has narrowed. If it has, let your sit bones and coccyx spread apart, melting

the tension there. Visualize the tiny strand of fascia between your anus and coccyx becoming longer.

Slightly increase the pressure of your feet against the wall, and picture your sit bones staying wide apart. Keep your anal triangle spacious as you repeat the tipping movement of your sacrum.

And again return to neutral.

As you press your feet once more and rest back into twelve o'clock, you will notice that the shift of weight through your pelvis has made your thigh bones move up, taking your hands with them. Your thighs have actually shifted forward in the hip sockets.

Your hands will ride down when you return to neutral. Notice how your thigh bones then settle back into their sockets. Perhaps one hip settles in more easily than the other. Observe that without wishing for symmetry right now.

From there, continue rolling down beyond neutral into six o'clock. This creates a small arch in your lower back. Your upper back and shoulders continue yielding to the floor. Notice that your thighs now sink even more deeply into your hip sockets.

Once again return to the center of your clock. Pause to soften any tension in your calves, thighs, or pelvic floor.

Softly, slowly, roll back into twelve o'clock. Then return through neutral and roll down into six o'clock. And repeat. Feel the movement of your thighs in your hip sockets as your sacrum rocks back and forth. Then rest in neutral. Check to be sure you are breathing steadily and gently.

This is a good place to pause and rest, or to take a break and continue the practice during another session.

From here, lean your clock face toward three o'clock, toward the left side of your pelvis. And then back to neutral. And now lean your clock face gently into nine o'clock. And back to neutral. You may notice that it's easier to yield into nine or into three.

Next time you move into the stiffer side, pause there. Imagine your thigh bone on that side sinking more deeply into its hip socket. Picture sand pouring into the base of an hourglass. Exhale. And then return again to neutral.

Check that you are still aware of your feet being in contact with the wall and that your calves are soft.

And now begin a slow-motion rocking between three and nine. The movement is so small that someone watching you would not see it. Appreciate the ease with which you yield into the easier side. Be gentle with your wish for the stiffer side to soften.

Notice that as you rest into three o'clock, the nine o'clock side floats slightly upward, away from the floor. As you yield into nine o'clock, the three o'clock side rises.

As you yield again into three o'clock, your left thigh rests back into the hip socket, and your left buttock softens. As you yield into nine o'clock, your right buttock softens, and your thigh bone rests deeper and deeper into the right hip socket.

Return to the center of your clock, with awareness of the neutral curve in your lumbar spine. Feel the spaciousness of the anal triangle of your pelvic floor. Breathe.

To finish, slide your feet up along the wall, straightening your knees. Reach your arms up above your head. Relax your concentration. Let your body move in any way that feels comfortable.

When you're ready, roll to your side and rest in a fetal curl for a moment.

Then bring yourself up to standing.

Notice how it feels to be upright. Observe how the weight of your body rests through your ankles and into your feet. Notice your sense of presence in this moment. Notice how the world appears to you from this place in yourself.

When you walk, you may be newly aware of your sacrum. Observe how that awareness affects the way you're moving. Perhaps there's a new ease in the way your legs swing under your body into each next step.

Perhaps there's an unexpected shift in your mood.

Tail Space

Poor posture is most obvious in the carriage of your head and shoulders, but in fact, your pelvis is often the literal seat of the problem. When relationships between the pelvic bones and hips are skewed, everything above and below is affected, as you have been able to feel for yourself in the *sacrum clock* practice. The meditation helps you experience your pelvis as a base of operations between your spine and legs.

Tucking the tail under – a habitually backward tilt of the pelvis – provides poor support for the spine, restricts movement

at the hip joints, and limits movement of the legs. Although tilting the pelvis back – moving into twelve o'clock, for example – is a normal movement of your pelvis, it is not a healthy place for your pelvis to stay.

Chronic shortening of the myofascia around the anus and the coccyx is one of many reasons for the habit of tucking the tail. Many of us have landed painfully on our coccyxes. We were soaring down the skate path on our rollerblades, and wham! This usually happens when we're having fun. Sitting down becomes a trial for weeks afterward. Guarding the injured area shortens fascia in the posterior triangle of the pelvic floor and embeds new brain mapping of the pelvis.

Many myofascial structures of the pelvic floor and hip joints collaborate in shortening the anal triangle. You can begin to release this area by imagining that the anococcygeal ligament can lengthen. The ligament's location between anus and coccyx makes this easy to picture. The ligament itself may not actually get longer, but the visualization causes structures around it to relax.

Experiment by placing one finger lightly on the tip of your coccyx. If your coccyx has been bent under by a bad landing, you may have to reach your finger forward between your 'cheeks'. After gently locating the tip of your coccyx you can bring your hand away.

Now, without changing anything else about your posture, draw your tail farther forward toward your anus. You are making the tail-tucking pattern worse on purpose, to feel how your tissues contract and to highlight that sensation. Then release, imagine your 'tail space ligament' lengthening and your coccyx moving back away from your anus. The movement is subtle, internal, and should not produce an obvious change in the

orientation of your pelvis. But notice how that tiny release of the posterior pelvic floor affects your overall stance – you'll feel securely planted on your feet and upright in your torso. You may even notice an interior lengthening sensation as far upward as your throat.

It will be beneficial to review the clock meditation with this added detail in your awareness. And carry your tail space awareness into the rest of the meditations in the book (Bond 2018).

There are many reasons for tensions and imbalances in the pelvic floor – sexual trauma, traumatic childbirth, and lower bowel congestion, to name a few. Any of these can affect the function of your body as a whole – your movement, posture, and peace of mind. It will benefit your *body mandala* practice to seek professional help for such issues.

The Minute Hand

Many people feel stiffer on the 'nine' or 'three' side of their sacrum clocks, with a stiffer hip joint on the same side. If that is true of you, see whether this pattern correlates to your 'preferred leg', the one you stand on first to put on your pants. The lumbar fascia on that side of your lower back is also likely to be thicker than on the other side. This is both the deep fascial patterning of your personal *contrapposto* (see Chapter 7, Bond 2018) and a habit of your brain.

Once the basic sacrum clock practice feels familiar and easy, you may be able to re-map your asymmetrical pattern by practicing minute-by-minute circuits around your clock face. Begin at 'twelve' and find your way clockwise or counter-clockwise around the hours. Yield into each minute, traveling as slowly as the minute hand. You will likely find there are

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flat places in your circuit even though the clock face is round. You may also notice hesitations – areas where the movement feels discontinuous rather than smooth. These hesitations indicate that your brain is attempting to map new coordination at your sacroiliac joints. Respect the hesitations. Patient practice will smooth them out.

Coach yourself to yield more deeply into the flat or bumpy areas. You can refresh the yielding sensation by reviewing the *rolling* practice from chapter one (Bond 2018). Also recall the way inhalation creates multidirectional vectors through your body. Use your inhalation to expand your interior space and your exhalation to help you yield. Patient interoception invites stiff and matted fascia to soften so that bony surfaces can decompress.

It does not matter whether you make a perfectly round transit around your clock face. The practice is effective without your having to reach perfection. Stop your practice whenever you begin to feel frustrated. A short period of sincere practice will give you a measure of new coordination, but trying to hurry your body into a new pattern will only create more tension.

Walking Integration

After you stand up, take a walk to notice any effect the sacrum clock practice has had on your legs, hips, and spine. Simply feel. Don't try to analyze it or make something happen. It's fine if you notice nothing at all at first. Creating new movement maps in your brain takes time and patience.¹

Healthy coordination is intrinsic to your biotensegrity structure. Walking biomechanics involves the way the bones that comprise each joint float against one another in the fascial matrix, the way the various muscles add impetus, and how the entire fascial net supports and facilitates each contributing joint action. Actually, every cell in your body is involved in every moment of every step.

Over time, we all acquire habits that obstruct tensegral coordination. Sacrum clock and other practices [in the book] help you revise those habits. By working with micromovements, you reach the deepest layers of your fascial body and reawaken sensations that your nervous system has forgotten.

Neural plasticity, and the brain's relationship to the body, is highly changeable. According to psychiatrist and neuroscience writer Norman Doidge, MD, walking generates new brain cells and growth factors that strengthen the neural connections involved in learning a new skill (2015). When we feel our bodies differently, we experience our movement differently, and such newly felt movement is a new motor skill.

Reflection: A Random Pain

I wake up early with pain in my left knee. It hurts to bear weight on it. It hurts to use the toilet, hurts to feed the cat, so I don't even consider a morning walk. Random pains like this tend to assert themselves the older I get.

Okay, I decide, I'll do some stretches on the floor; get my juices moving that way. I lie down. Without thinking about it, my feet go up on the wall in position for the clock practice. It's comfortable for them to be there.

The knee pain could be sourced in my pelvis. My sacroiliac joints could be out of alignment and tension resulting from that could irritate nerves that affect the knee. I suspend my shins from their imaginary cables, and slowly travel around my pelvic clock. The movement stutters, especially on the left side, and it takes a while for it to smooth out.

Twenty minutes later I stand up feeling bigger. The knee pain is gone.

What has happened? I can't be sure whether my clock meditation has realigned my pelvic bones and relieved an impinged nerve, or whether the pain was a transient event that resolved on its own. What I can say with confidence is that by paying attention to the spaciousness and yielding of my body on the floor, and to the micromovements of my pelvis, I affected the tensegral expansion of my fascial body as a whole. More often than not, a random pain can be modulated by embodied wholeness. Not only physical pain. I remember my argument with Richard (Chapter 3, Bond 2018) – tuning in to my embodiment transformed that pain as well.

Endnote

1. In *The New Rules of Posture* (Bond 2007) and in my video course, *Heal Your Posture* (Bond 2012), I simplified the

mechanics of walking into incremental joint motions. In *Your Body Mandala* (Bond 2018), my intention is to help you embody your wholeness, rather than to focus on what various parts should be doing while you walk.

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