Learning Conscious Weight Commitment

By Michael Protzel

This document is primarily for people who have attended one of my workshops. It summarizes the essential theory of weight commitment and reviews the kinesthetic experiments conducted at the workshop. This document may also assist website visitors seeking practical instructions. Please be advised, however, that it will not be easy to expose weight commitment habits and to re-learn innate uprighting through words and pictures alone, without direct person-to-person instruction.

Nothing in this document should be construed as medical advice. I am not a doctor. If you are concerned about a physical problem, you should consult a physician.

Part III of IV — Weight Commitment & Standing

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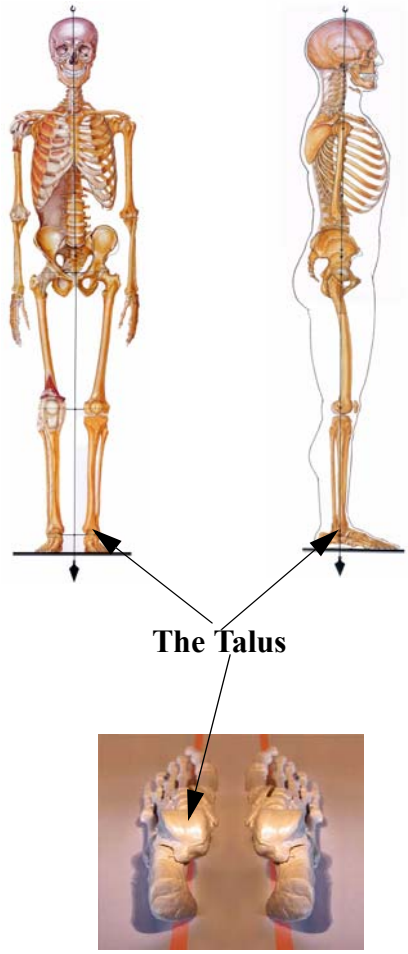
Innate Uprighting — A Flexing-Extending Cycle

Having evolved over millions of years, innate uprighting enables us to lift ourselves into verticality with minimal effort. We are all born with this capacity and, in fact, employ it in sitting and standing as infants/toddlers. Innate uprighting operates on a continuous, flexing-extending cycle. When we commit our weight straight down, all of our major joints flex a tiny bit — head-neck joint, vertebral, hip, knee and ankle joints. This flexing allows a slight falling of our entire body mass, which generates substantial energy. This energy then feeds our deepest extensor muscles that lift us with optimal efficiency the tiny amount we have fallen. In employing innate uprighting, there is no need for us to *hold* ourselves up.



Foot Architecture

The foot is more than merely a support structure upon which we stand. Primarily, it is a *response* organ. Under the proper conditions — conditions we control — the foot receives the force generated by our falling body mass, and responds with powerful muscle contractions that jump-start our extension upwards. But this optimal response doesn't happen automatically. First and foremost, it requires that we accurately direct the trajectory of our falling body mass. We need to let it fall straight down. When we mis-direct the trajectory, it negatively impacts our foot response, and the uprighting response of our whole organism, often substantially. To understand the relationship between the trajectory of our falling and the quality of our uprighting response, I draw your attention to the architecture of the foot.

The Tali — Our Balance Points

It is a misconception to think we balance on our feet. Of course, we *stand* upon our feet. But our balance is more delicate. We actually balance upon our two tali. The talus is the top foot bone. It is located way to the inside of the foot, slightly in front of the heel. In simple standing, when we commit our weight straight down, this weight passes through the center of the tali. Committing weight away from this tiny pedestal sets us toppling and requires an immediate ground-to-crown recovery response. To re-learn innate uprighting in standing, it is essential to get to know this critical bone.

Ground Contact

Recognizing our connection with the ground is essential. The places on our skeleton where we bear our weight are the leverage points from which we begin our ascent upwards. There are strong and weak leverage points. We need to be able to distinguish them. We do this by tuning into the pressure sensations on the bottom of the feet. Our weight bearing sensations tell us a lot about the quality of our weight commitment and the quality of our uprighting.

Optimal Ground Contact and the End Points of the Longitudinal Arch

Our foot slopes downward substantially, inside to outside. In fact, the foot is *two-tiered*. The upper tier on the medial side of the foot is comprised of the first metatarsal, and the second and third metatarsals. All three are directly linked to the talus through the navicular and three small cunieform bones. The lower tier on the lateral side of the foot is comprised of the fourth and fifth metatarsals which are directly linked to the lateral side of the heel (calcaneus) through the cuboid bone.

The top of the upper tier is the strong part of the foot. The dark blue line represents the longitudinal arch. It is elevated, with only two points touching the ground — the pivot point on the heel and the ball of the big toe (here, I refer to the two small sesamoid bones on the big toe, together, as one point of contact). We need to reacquaint ourselves with this important part of the foot, upon which so much depends. Here's a way to begin to do this. This exercise also helps promote sensitivity to our *shifting* ground contact and how to use this to our advantage:

Pivot Point on a Rounded Heel

The heel has a rounded bottom. When we commit weight straight down through the talus, the heel naturally rocks inwardly on its pivot point so that the force of our falling goes into the strong part of the foot and activates our deepest extensor musculature that uprights us optimally.

When we mis-commit our weight — usually too far back and out to the side — the force of our falling becomes a destabilizing influence, driving us away from the strong part of the foot, requiring us to use far greater muscular effort to upright ourselves.

Stand with your feet parallel, underneath your hip joints. Notice where you bear your weight. Locate, and feel the ground contact under the longitudinal arch — the pivot point on the heel and the big toe.

Now, start rocking front to back, flexing the ankle joint — forward onto the toes and backwards onto the heel. Do it smoothly, pendulum-like — at a comfortable, slow-to-medium tempo. Do it for a minute, back and forth. Notice the ground contact at the heel and at the ball of the big toe. Notice the changing pressure at the heel and ball as you move forwards and backwards. If you notice yourself falling off to the side on either foot, gently bring yourself back to the inside of that foot.

Next, give yourself the instruction to go as far in each direction as you can possibly go without losing your footing — way far out onto the tip of the toes and way back onto the very back of the heel. You want to notice that the further forward you go, the more muscle effort it takes to stop yourself and to reverse direction. And the further backwards you go, the same thing. Do it for a minute, back and forth.

Next, start to lessen the range of movement, reducing bit-by-bit how far forward and how far backward you go. Keep lessening the sway until you are moving *as little as possible*, while never stopping still. You want to observe that the greater your sensitivity to ground-contact-pressure, the easier it is to stop and change directions. Ultimately, this is how we control our uprighting.

The Talus and the Pivot Point on the Heel — What Happens When We Fall Straight Down

The heel is not a flat surface. It has a pivot point — a little bit towards the medial side of the heel — from which we can rock....front-to-back, inside-to-outside. This pivot point is ultra-important in uprighting. When we allow ourselves to fall straight down through the center of the talus, the ankle flexes, and the heel rocks on this pivot point medially and slightly forward. This drops our body a little bit in space and directs it towards the strong part of the foot. As this happens, our ground contact at the heel shifts medially. Sensitivity to this shift is what enables us to stop dropping and to start lifting.

This is the central transaction of innate standing. Using leverage points directly underneath the center of each leg allows us to transform the power of our body weight with optimal efficiency. Ideally, we'd like to be able to develop the sensitivity to stop our dropping-off-the-pivot-point-on-the-heel as close to the pivot point as possible. Our body weight generates substantial force. We only need to fall a tiny bit to capture the power needed to lift ourselves up. Moreover, by stopping our flexing quickly, we keep ourselves from falling very far — and, thus, we don't have far to lift. The power of our weight feeds plantar muscles and our deep leg and spinal extensors — which lift the entire body segment-by-segment and, in the process, rock the heels back and up onto the pivot points. As soon as we are completely extended, we flex/fall again. It is a rapid process. This is the uprighting cycle.

Common Maladaptive Standing Postures — Enabled by our "Safety Net"

Were it not for the way we habitually mis-direct the trajectory of our falling body mass, we would all be uprighting optimally. It is, after all, a highly-evolved human capacity. But interference starts for all of us in early childhood when, without awareness, we begin to throw our weight backwards repetitively in the common act of

sitting back against a chair-support. We simply follow our elders. Routinely committing weight backwards in sitting is inane. It goes against millions of years of evolution. Its acceptance as an appropriate behavior is clear evidence of widespread societal ignorance.

We cannot improve our falling trajectory without first becoming well aware of the falling trajectory we are *already* generating. With gravity, our body mass is *always* moving down to earth. And we are *always* directing its trajectory, whether or not we are aware of doing so. We need to become aware.

There are three typical standing habits I have noticed.

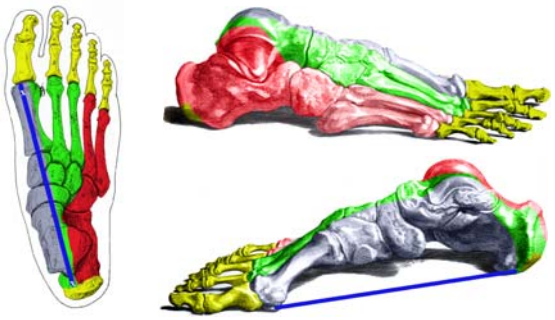
(1) Falling back, bearing most of our weight on the heels.

(2) Falling back, but then using psoas muscles (hip flexors) to pull us forwards so that our weight is borne mostly on the balls of the feet.

(3) Falling back and out to the side, with almost our entire weight supported by one leg, on the outside/back of the heel.

We could not assume these common 'postures' had our biological ancestors not evolved a foot structure with multiple weight-bearing options — which are absolutely essential given the unevenness of the surface of the earth. When we hit an unexpected 'bump in the road' — and momentarily 'fall off' the strong part of the foot — we need the strength and flexibility to recover our balance without injury. In weight bearing terms, this means that we need ground contact beyond the pivot point on the heel and the ball of the big toe. I call this supplemental ground contact our *safety net*.

In the foot models shown in this article, all ground contact points not underneath the dark blue line (and there are only two points under there) are safety net points. The largest part of the safety net is lateral to the longitudinal arch — pictured in green and red. The parts colored in yellow represent our front and back safety nets. The safety net in back is simply the very back of the heel. It is small and inflexible. Our forward safety net, the tips of the toes, are far more flexible — but we don't want to 'live' there full time.



Our Safety Net

The longitudinal arch (the blue line) is the strongest part of the foot. It is located on the medial side. When we commit weight straight down, we bear our weight on the medial side of the heel and on the ball of the big toe. When we commit our weight other than straight down, we are forced to bear weight upon weaker parts of the foot that should only be used infrequently, when necessary. That's why I call them our "safety net."

Note that the top of the medial side of the foot rests much higher than the lateral side. Thus, when we commit weight out to the side, we descend in space and, literally, make ourselves shorter.

Common Standing Postures

Left: Committing weight backwards, bearing weight on the back of the heels.

Right: Committing weight backwards, but pulling ourselves forwards using the powerful psoas muscles, resulting in our bearing our weigh more on the balls of the feet.

Center: Committing weight backwards and to the side, resulting in our standing basically on one leg, with our weight being borne on the back, outside edge of the heel. In this situation, the supporting leg has to work ridiculously hard.

• In falling back onto the back of the heel, we lose solid ground contact under the ball of the big toe. We thereby lose the innate response of plantar muscles. Thus, we immediately lose the innate uprighting system. The force of our falling is now working against us. Our whole self is falling backwards. We are not able to fall very far before reaching the very back of the heel — the 'edge of the cliff.' We must hold onto it for dear life, to keep us from a potentially dangerous collision with the ground. This holding comes in the form of strenuous leg and pelvic muscle tensing. It is important to note that since falling backwards *over*-extends our ankle and hip joints, we become forced to use powerful *flexor* muscles to sustain uprightness. This is not nature's way. Our innate uprighting system has evolved to work through the activity of deep *extensor* muscles.

• Some people feel more comfortable adding a little extra hip flexor (psoas) tension, which pulls the pelvis forwards, resulting in weight being borne mostly on the balls of the feet, requiring additional effort to stop that forwards fall.

• Based on my observations, the most common standing habit of all, is the habit of falling back and off to the side, with virtually all of our weight on one leg. We are able to do this in large part because of the rounded-shape

of the heel. The heel is not one, flat surface. It pivots, giving us side-to-side play to help us when walking on uneven ground surfaces. When we are standing on one leg, we have fallen completely off the upper tier of the foot, and *descended* onto the smaller metatarsal bones on the outside of the foot and onto the outside/back of the heel. In this situation, it takes enormous muscular effort in the legs to hold us in place, involving the locking of ankle, knee and hip joints. Plus, the act of centering ourselves in the midst of our falling way out to the side distorts our skeletal shape, giving us a zig-zag look. (This side-to-side play that the pivot point on the heel provides protects the lower leg bones at the ankle joint. Without the flexibility that our rounded heel provides — and the many joints between the small foot bones in front of the talus — the lower leg bones around the ankle would be a lot more susceptible to fracture.)

You already experienced the front and back safety nets when you explored how far forward or backward you could sway and still come back to center. To experience how the lateral safety net works, try this little exercise. It is also a good illustration of how extension works generally.

Stand perpendicular to a wall with a closed fist gently touching the wall — far enough away so that your arm can be fully extended but not locked. Let your weight fall into the fist, letting the elbow bend. Then extend the elbow, pushing yourself away from the wall. Vary the amount of weight you let fall onto the fist. The closer you get to the wall, the more weight will go into the fist. The more weight, the more arm effort it takes to push yourself away from the wall.

Now, change your position. Move a few inches further away from the wall, so that your straightened index finger touches the wall very, very lightly. Let your weight begin to fall onto this finger-tip. Notice that simply by being sensitive to the pressure, you can stop your fall very quickly, after only the tiniest amount of weight has fallen onto the finger.

Playing with Extending the Arm While it is Bearing Weight Helps to Clarify How Uprighting Works

Our lateral safety net in the feet works in a similar fashion.

Stand comfortably with feet underneath the hip joints. Re-establish awareness of the pivot point on the heel and the ball of the toe — on both feet. Send your weight through the talus to optimize ground contact at these four points. Now allow yourself to fall off to one side so that you are standing on the outside of the foot. Now bring yourself back to center. Now fall off to the side again, but this time with sensitivity to the added pressure that is created upon the outside of the foot as soon as you start to fall.

With a keen sensitivity to this pressure, we are able to activate the deep muscles underneath the outside edge of the foot to give us a little 'push' back to center. But we tend to put *all* of our weight onto the outside edge of the foot, without awareness. This is way too heavy a load for these small, deep muscles to handle.

Epilogue

Tens of thousands of years ago, the ancestors of modern human beings were very well coordinated, like all mammals. They had never interfered with their powerful uprighting capacity. They were in touch with their body weight, and naturally directed it straight down. In those days, what determined how the foot bore weight, and how we uprighted moment-by-moment, was simply the shape of the ground. With modern human beings, the story is different. We live in a world where there are many more flat surfaces than there were ages ago — solid indoor flooring, paved city sidewalks and streets. Theoretically, it should be much easier now for us to stay atop the strong part of the foot. But it isn't — because no longer is it the shape of the ground that determines how the foot works. What determines the workings of the foot today is how we commit our body weight. And unfortunately, modern human beings have, for the most part, lost the ability to commit weight accurately.

Instead of using the force of our falling to our advantage by letting our body mass fall straight down, we mis-direct our falling trajectory. This drives us off balance. Unable to pick up the kinesthetic cues that provide an early signal of our mis-use — the weight bearing sensations cascading away from the ball of the big toe to the 2nd and 3rd metatarsals, and then further down and out, to the lower tier, the 4th and 5th metatarsals — we are unable to consciously intervene, unable to stay atop the strong part of the foot. As we fall off to the side, and down, unaware of our changing weight commitment, we are rescued only by subconscious balancing processes. But they leave us uprighting far below our potential.

To learn to reactivate our innate uprighting system, we need to become more sensitive to the force of our falling — to notice moment-by-moment the weight bearing sensations that are being created by how we are committing our weight. We need to recognize that innate uprighting is never still, but rather a buoyant, flexing/extending cycle that is ongoing. We need to let ourselves fall straight down so that we flex forward-and-in a little bit. As we flex, we need to be sensitive to the change in ground-contact pressure at the heel (and, to a lessor degree, at the ball of the big toe). The sooner we notice the change in pressure, the sooner we start extending/lifting (and the less effort it takes to lift). As we lift/extend, we again want to notice the change in pressure, in reverse. It is this kind of sensitivity that enables us to stand most efficiently.

Theory, Sitting Walking

This Standing document is part of a four-part series, *Learning Conscious Weight Commitment*. The other parts are.

Part I — Weight Commitment Theory

Part II — Weight Commitment & Sitting

Part IV — Weight Commitment & Walking

Michael Protzel came to the Alexander Technique at age 30 with chronic ankle, knee, hip, back and neck injuries that were getting progressively worse. The AT basically saved his life. After two years of private lessons, he trained to teach with Tom Lemens. He was certified to teach the Alexander Technique in 1987, but did not first notice himself mis-committing his body weight until 1992. He has been exploring his falling ever since. Michael maintains a private practice in NYC and northern New Jersey.

Michael was NASTAT News Editor from 1989-1995 and was recipient of NASTAT's first Distinguished Service Award in 1995. He was Chair of AmSAT's Professional Conduct Committee, 2001-2009. Michael is involved with other long-term self-observation processes, including psychoanalysis, Tai Chi/Qigong, Carl Stough's Breathing Coordination, Peter Grunwald's vision work and the study of jazz guitar. Michael is also President and CEO of Gann Law Books, one of the few remaining small, independent law publishers in the United States. Gann specializes in state-of-the art legal analysis, both in print and online.

*Michael gratefully acknowledges the contribution of **Maggy Breuer,** who assists Michael at workshops and has helped in developing www.uprighting.com, and in writing papers on weight commitment. She too is a certified teacher of the Alexander Technique, a member of GLAT (the German society). She teaches privately and in small groups in and around Mainz, Germany, and is an avid tango Argentino dancer and teacher. Her website is **www.alexandertechnik-mainz.de**.*

For more on Weight Commitment and for access to all written articles, go to www.uprighting.com.

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