

## Creating Body Awareness to Slow Down the Aging Process (Part 1)

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Assessments are undeniably important to reduce compensatory movement patterns that can increase the risk of injury when engaging in remedial exercise or athletic activities. I have many different techniques for assessing my patients. I prefer to begin with a static postural assessment, looking from the front, side and back view.

### Assessing Posture

I begin at the feet and look for any eversion of the foot in relation to the tibia. I also look for ankle [pronation](#) or supination, as well as excessive ankle dorsiflexion or plantarflexion.

At the knees, I look for valgus or varus stress, tibial torsion in relationship to the femur, internal or external femur rotation, and any excessive knee flexion or hyperextension. At the hips, I look for any abnormal elevation, anterior or posterior pelvic tilt, pelvic rotation or lateral flexion. When assessing the upper body, I look for any thoracic offset, rotation or flexion. I also check the shoulders for rounding or unusual elevation discrepancy. When assessing the head position, I check to see if the ear is in line with the shoulder, noting if there is a forward head posture.<sup>1-2</sup> In addition, I will check to see if the load-bearing joints appear forward of the lateral malleolus or if the person appears to have a side lean.

Some practitioners dismiss static postural assessments, but I find the information helpful in creating body awareness for my patients. It also helps me decide on effective corrective (experimental) exercise programs that aim to improve muscle imbalances and asymmetries. I like my patients to become aware of the way they stand, and then I teach them what neutral posture feels like.

Having a past history of injury and prior injuries can leave compensations / deviations that may show up in the static evaluation. An important treatment goal is to decrease the risk of having a future injury (especially during increased loads on the body or athletic training).

### Movement Patterns

Static observational assessment (standing, sitting) is followed by movement assessments. With so many people spending their days in front of a computer, driving or watching TV, teaching them to sit properly to avoid some of these muscular imbalances is important.

After static posture evaluation, I start using movement analysis. This can include watching patients rolling on the floor from supine to prone positions, and prone to supine positions. This allows me to observe segmental and nonsegmental sequencing.

I incorporate movement analysis that allows me to observe the same progression of the development of the sagittal spine curves of an infant in the womb, moving to prone on elbows, crawling, kneeling, half-kneeling, squatting, standing, and eventually stepping. Any position that

demonstrates a faulty movement is now considered in corrective exercise. I have an entire template of body-weight maneuvers to retrain / repattern our normal development stages / postures, starting with being on our back as an infant, to rolling over onto our stomach, to pressing up, crawling, and eventually sitting upright, to standing with reflexive head control, all of which appear to be primary factors necessary for upright adult postural control.

## Gait and Balance

Next, I assess [gait and balance](#). Life is very dynamic, and one of our jobs is to help keep life and movement as optimal for as long as possible. Static alignment and balance is the prerequisite to dynamic function; however, it is not an absolute predictor of optimal performance.

I now use computerized analysis to measure and capture the timing of gait. Our bodies use three primary control systems to help control balance: eyes, ears and the nervous system. This makes a very powerful, relevant connection with changes in posture to the visual, vestibular and somatosensory systems as a lifelong process. The potential for the continuous change in one variable (vision, balance, motor control) establishes the need for ongoing, lifelong assessments.

As chiropractors, we can assess patients standing on one leg, with eyes open and eyes closed, for a static interpretation of time and balance. By employing simple but precise optical equipment, we can easily correlate posture, gait and performance for a more dynamic understanding.

Imbalances are often the result of years of bad habits, both at work and during basic activities of daily life. Add athletic activity to the mix and the risk of injury may be high, primarily because many people are unable to maintain neutral alignment during these activities.

Part of the problem seems to be that these habitually bad postures negatively affect kinesthetic awareness. Knowledge of one's own body alignment and how to correct it is often inaccurate. It is important that patients observe their movements in a mirror or even on video. This may help them gain a better understanding of correct and incorrect postures, especially if the practitioner continues to emphasize the neutral position.

## Corrective Strategies

I explain to patients that over time, proper stretches and strengthening exercises will improve the length-tension relationships between muscles, and will usually help to bring the load-bearing joints back into their proper position or at least a more stable position. Synergistic dominance of certain muscles and altered [reciprocal inhibition](#) can lead to faulty arthrokinematics and potentially pain or injury if a proper corrective exercise program is not put in place.

Approximately 50 percent of my office visit time is spent doing hands-on therapy and the other 50 percent is spent experimenting with which exercise maneuvers the patient can do at home, on their own, to help resolve chronic painful conditions. My hope is that training posture alignment, functional movement assessments / training, gait and balance assessments / training, and repatterning with chiropractic care and therapeutic lifestyle changes such as diet, nutrition, and breathing exercises, can help slow down the degenerative processes of aging.

## References

1. Clark M, et al. *NASM Optimum Performance Training for the Health and Fitness Professional, 2nd Edition*. National Academy of Sports Medicine, 2004.
2. McCreary K, et al. *Muscles: Testing and Function With Posture and Pain, 5th Edition*. Lippincott Williams and Wilkins, 2005.

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Part 2 of this article appears in the Jan. 15, 2013 issue and features exercise strategies to maximize patients' balance and postural control.

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