[IMAGE]

The Basics of Balance

By Dr. Brian Jensen

Balance is easy to take for granted; after all, our every movement relies upon it in some fashion. Most of the time, we only notice balance when it fails us - like when we trip for "no reason" or find ourselves leaning slightly to the left or right while standing. Actually, without balance, we couldn't do much at all, which is why it's so important to build a foundation of proper balance, particularly as we age. Let's learn more about the fundamentals of balance.

Balance: When you look up the word in the dictionary, there are more than two dozen ways it can be used; for the purpose of this discussion, let's consider balance as it relates to our physical structure. Balance is controlled by three distinct systems: the visual system (eyes), the vestibular system (inner ear) and *proprioception* [proh-pree-*uh*-sep-sh*uhn*] - a very complex system of sensors in the skin, joints, muscles, tendons and ligaments that are responsible for you feeling vibration, pressure and the overall awareness of the position of your body.

mother and daugher - Copyright â Stock Photo / Register Mark If you lift your hand above your head, you are aware of the fact that it is above your head; you can sense it being there because of proprioception. If you stand very still and pay attention to your body movements, you can sense subtle motions of leaning back and forth as your body gently sways. Your eyes, the fluid-filled canals in your ears and the sensors in your feet are telling the brain which muscles to contract to keep you standing upright with your eyes level with the horizon. If you close your eyes, removing one of the senses that is keeping you upright, you are likely to sway more dramatically and could even fall. *(Be careful if you try this exercise. Stand next to something you can hang onto if you need to!)* Sometimes an ear infection can cause one to feel dizzy; that is because the brain is getting distorted information about balance.

How We Develop Balance

Balance is an inborn characteristic that starts developing shortly after birth. As eyesight improves, the muscles of the neck develop as a child explores their new world and eventually is able to lift their head, which begins the development of the forward curve in the neck. This is followed by creeping and crawling,

during which the curve in the low back is formed. This is all necessary for the ultimate act of balance to occur: standing. Standing is followed by falling (over and over again) as the brain is flooded with information regarding where we are in space. All of this information ultimately is used to initiate the first steps of walking (however uncoordinated they may be). You can see the efficiency develop and soon the walking turns into running.

Feet: The Foundation of Proper Balance

The feet are very important in balance and posture because they are loaded with proprioceptive sensors. These sensors are constantly sending signals to the brain, which then sends signals back down the spinal column to the muscles telling them when to contract and when to relax. Every movement from standing to walking, running and jumping are controlled by this system.

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How efficiently the joints of the spine work are directly affected by the feet. There are three arches in each foot that serve as the foundation of the entire body. Studies have shown that nearly 80 percent of the population has lost some or all of the support in those arches. When that happens, it creates physical stress in the feet, knees, hips, pelvis and spine, as well as an abnormal amount of stress on the special receptors in the feet that are trying to communicate with the brain. This physical stress can contribute to degenerative arthritis, while the neurological stress can interfere with normal muscle function.

When this happens, the bones of the body can become slightly misaligned; this is what might be seen as a postural distortion. These seemingly minor "misalignments" are often not painful but are the beginning of the slow-developing wear and tear called osteoarthritis. This is the wear-and-tear arthritis many people associate with "old age" and is responsible for knee and hip degeneration, spinal disc degeneration, as well as the deformity in the upper spine called Dowager’s Hump.

The Road to Better Balance

In chiropractic, balance is the focus of postural alignment, muscular strength and flexibility. We know it has a profound impact on the health of our nervous system, and how well we age can actually determine if we suffer with some forms of arthritis in our later years. Regular chiropractic adjustments ensure that all of the signals between the body and brain that facilitate proper balance travel back and forth without interruption. Research has shown that joints in the body that don’t move freely turn off those signals that enhance

balance. So, if your joints are not working optimally, then your balance is most certainly affected!

balancing rocks - Copyright â Stock Photo / Register Mark Balance can diminish over time and is often complicated by neurological deficits related to diabetic neuropathy, dementia, multiple sclerosis, spinal cord injuries or tumors and degenerative changes in the spine and extremities. For older patients who suffer from these types of disorders, it is important to remember that in many cases they do respond positively to chiropractic care. Typically improvements in proprioception and balance are quite achievable. Better balance could be the difference in avoiding a devastating fall, which is particularly important as we age.

Many chiropractors are specially trained to evaluate the structural integrity of the arches of the feet to see if they are a contributing factor to postural stress. Supporting the arches of the feet with a custom-made orthotic device (insert) that you wear in your shoes has been shown to block the abnormal foot motions that create a twisting stress in the knee, hip, pelvis and spine and that improves balance and posture. The messages sent from the feet to the brain are done so more efficiently when the arches are properly supported. This support is best implemented as early as age 6, but can be helpful to anyone who would benefit from improved balance and posture.

Balance and posture should be considered an important part of everyone's fitness from the time we are young. All of the suggestions in this article will definitely help improve your balance and muscular coordination. Don't be surprised if you notice a difference in your day-to-day activities or sports activities. You will feel stronger and more coordinated. Most importantly, you will have taken a big step in preserving the health of your spine by improving your balance.

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woman doing yoga - Copyright â Stock Photo / Register Mark **Balance Exercises: A Four-Step Progression**

In addition to chiropractic adjustments and spinal pelvic stabilization with orthotic inserts, there are certain activities that promote balance and don't require any special equipment:

- Begin by standing on one leg for 30 seconds and then shift to the other side. Practice this until you can consistently stand on each leg without losing your balance.
- Stand on one leg with your arms crossed for 30 seconds and then do the same while standing on the other leg. Crossing the arms adds complexity to the amount of information going to the brain from the sensors in the muscles and joints.

- Stand on one leg with your eyes closed for 30 seconds. (Be sure you are in an area where you can support yourself if needed. Stand next to a doorway or have a chair available to reach out to for support.) Repeat with the other side. Closing the eyes increases the difficulty of the exercise by removing one of the systems of balance.
- Stand on one leg, close your eyes and cross your arms for 30 seconds. Repeat with the other side.

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