

Why You Should Stand

**Always consult your Physician and/or Therapist before beginning any standing program.*

Weight Bearing for Bone Strength

Your bones throw off calcium when you are sedentary for a prolonged time whether it's from bed rest, sitting or other forms of immobilization. An interesting example is when NASA scientists discovered abnormal loss of calcium and reduced bone densities in astronauts who spent extended time in weightless environments. The reversal of their bone loss occurred after these astronauts returned to substantial time of normal activity under full gravity. NASA actually contacted us back in 1988 to see if we could create a device that could be secured into the spacecrafts to position the astronauts in a standing, fully stretched position with a loading mechanism of 1 G force imposed onto their skeleton! So, coming back to earth now, the simple process of standing correctly to fully load your long weight bearing bones has been shown to be one of the most important factors in maintaining bone density and reducing the loss of calcium in those bones. When bone calcium loss occurs, not only will your bones weaken, but calcium can pass into your system and present problems in other areas of you body.

Urinary Tract Function and Renal System Health

As mentioned above, lack of weight bearing can result in loss of calcium in the bones. This "lost" calcium can then be excreted into the urine. Calcium levels that increase in your urinary tract can cause infection. Should the infection worsen, it can lead to deterioration of renal (kidney) function. There is also a possibility that some of this calcium can gather in the soft tissue in other areas of the body. More then 60% of us will have urinary tract infections! Standing will assist the health of the bladder and kidneys in additional ways by increasing bladder pressure; allowing urine to drain more thoroughly; and reducing residual urine pooling in the bladder, which reduces the occurrence of bladder infections. "Good stress" put on the body by standing will improve cardiovascular function, which also benefits the kidneys by increasing their filtration rate.

Cardiovascular Function and Circulatory Improvement

What's "good stress"? Another word would be "demand". Standing puts a "demand" on the heart, which produces a beneficial response. When we are sedentary for a period of time our heart de-adapts, or doesn't work as hard, because less of a "demand " is being placed on it. Repeated and progressive standing helps the adaptation of the heart, or re-strengthening, which will then aid with circulation, particularly to the lower extremities. Standing will also take the resting muscles to a stretch - another example of "good stress" from

standing that will improve the circulatory system. Add to that, decompression by taking the body to the upright position and "opening up" the chest cavity allowing the lungs to fully inflate and function, without the pressure of the seated body, which will improve the levels of oxygen in the blood. All of these interactions help deliver the oxygen-enriched blood to all parts of the body through improved circulation.

Muscle Stretching, Range of Motion, Contracture and Spasticity Control

The word stretch comes up a lot! Must be important! The body was made to stand fully upright to stretch and load (weight bear) the muscles, tendons and ligaments. If you have spasticity, the stretch you place on the muscle will assist in fatiguing the spasm and can reduce your spasticity by more than 30%. Working up to at least 30 minutes of stretching by standing will result in the greatest benefit of reducing your spasticity. Standing also allows you to take the joints through their full extent of movement, or range of motion. Keeping the muscles stretched and the joints fully ranged will assist in preventing, or controlling, a common and serious secondary condition - contractures. Contractures can cause serious health concerns. If the muscles, tendons and ligaments are not stretched fully and regularly due to prolonged sitting, they will tighten and not allow you to fully extend your skeleton and achieve complete range of motion. Inconveniences with dressing and transfers will occur, but most importantly, your ability to change positions, like standing or lying down, will be restricted and you will put yourself at risk for skin breakdowns. Stretch can also be a great pain reliever! Muscle tightening, skeletal compression from constant sitting, the limited ability to find alternate positions and muscle weakness can all be sources of pain. A complete stretch by correct standing positioning will often immediately relieve the pain.

Protection Against Pressure Sores

If you're going to take anything seriously, do it now! Pressure sores often require long-term medical care, or even surgery; treating one will cost thousands of dollars; and still has the potential to end up being life threatening - you don't want one of these! They are serious and they happen to too many of us with physical disabilities - it is one of the most common of the secondary conditions we are at risk for. A pressure sore (aka skin breakdown, decubitus ulcer) can happen when one of, or a combination of, the following occur: you just read all about it! Fractures of weak bones from lack of weight bearing that require you to stay in bed to heal; infections or excess calcium entering your system; poor circulation / poor oxygenation in all parts of your body; contractures and lack of range of motion which limit your choices for alternate positioning and continue to hold your body in a position (sitting!) that will keep pressure on the bony prominences, like your tailbone, hips, ischials (bones you sit on) or heels. Pressure sores can be a dangerous source of infection. They get worse if

not treated properly and can be life threatening. Standing can help protect against this serious problem in the many ways explained above. Plus while standing, air circulation lowers temperature and humidity at the seated surface, reducing another risk for pressure sores.