

Back Safe Movements

Core Stability

The key to having a strong, healthy back is to use it in 'neutral posture' at work and at play. A neutral spine, supported by healthy strong muscles is what constitutes 'core stability'. The back is 16 times stronger in a neutral S-shaped position than when out of this proper alignment.



The two simple realities for your back are:

- **You need to have good core stability.** Without it, your hip joints and muscles tighten up in order to try and increase the stability of the core. Without good core stability, the pushing, pulling, lifting motions that you make with your body is like firing cannons from a canoe. Wouldn't you rather work from a battleship?
- **You need to have good hip mobility.** See pg 2.

Neutral Core Stability is the ability to maintain a stable core (trunk) region that does not move or bend out of the neutral posture while pushing, pulling and lifting forces.

Neutral Core Stability requires the ability to recruit or 'turn-on' our trunk muscles (abdominal stabilizers, side stabilizers and back stabilizers) to stabilize a neutral 'three curve' posture while performing any activity from normal daily sitting, standing or walking posture to lifting, pushing or pulling. It is important to keep a neutral 'three curve' posture for these daily activities and especially while exerting any kind of force. Injury risk increases when the spine is stressed in a non-neutral posture with untrained core stabilizer muscles.



ErgoRisk Management Group provides consulting, educational services and ergonomics tools to improve industrial athlete productivity and reduce risk of musculoskeletal disorder development.

Back Safe Movements

Hip Mobility

The key to having a strong, healthy back is to use it in 'neutral posture' at work and at play. A neutral spine, supported by healthy strong muscles is what constitutes 'core stability'. The back is 16 times stronger in a neutral S-shaped position than when out of this proper alignment.

The two simple realities for your back are:

- **You need to have good core stability.** See pg 1.
- **You need to have good hip mobility.** Without it, your back posture will break down when working in awkward positions. That is, if your hips are tight, it is impossible to reach the floor without bending your back. Repeatedly using this type of motion only re-enforces the tightness in your hips and/or the weakness in your back.



Functional Hip Flexibility means adequately bending or pivoting about the hip joints to reach or lower ourselves into position, without losing our neutral core stability.

The human body is best hinged forward at the hip joint. The hip joint is designed to safely handle this movement and the powerful surrounding hip muscles are more than adequate for handling the required forces of the handled object and the weight of the upper body when leaning forward (Fig. 1). Individuals with stiff (inflexible) hips and low **Neutral Core Stability** will often bend through the low back resulting in an unstable C-curve spinal posture that is more at risk for injury (Fig. 2). The C-curved low back has little joint stability to handle movement of a load. In this position the muscles in the low back are too overstretched to effectively create the forces required for safe lifting, pushing or pulling. This back un-safe, C-curve movement habit weakens the low back and predisposes it to eventual injury. Movements as simple as putting on your socks in the morning or reaching for the smallest of objects could result in injury.



Fig. 1



Fig. 2

ErgoRisk Management Group provides consulting, educational services and ergonomics tools to improve industrial athlete productivity and reduce risk of musculoskeletal disorder development.