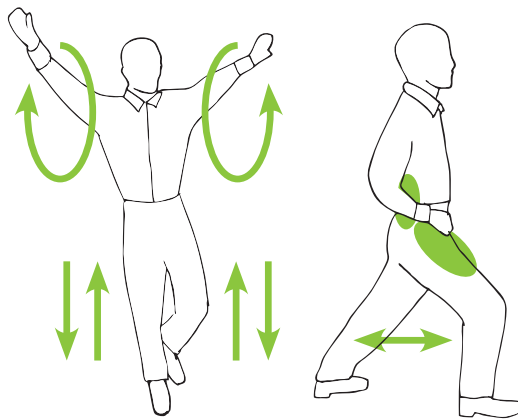


Safety In Motion®

The value of warm-up exercises



www.safetyinmotion.com



A decade of sports medicine research confirms that moderate warm-up exercise benefits both physical performance and injury prevention.

Warm-ups help prevent strains and sprains

In the world of peak-performance sports, and in military training, a decade of scientific research has repeatedly demonstrated that athletic performance increases, and soft tissue injuries decrease, when athletes engage in moderate dynamic warm-up exercises shortly before their event.

How does this research apply to workplace injury prevention?

Five to ten minutes of moderate warm-up exercise, done before starting work activity, is now considered a safe and effective method for reducing the incidence and severity of soft tissue injuries.

Moderate is a key concept when warming up. A study by the University of Calgary published in May, 2011, suggests that any warm up exercise, when done for too many repetitions or too long a time period, results in muscle fatigue that reduces both the improved performance and injury prevention benefits. (Continued)

For more information, on workplace health and safety topics, visit: saif.com/safety

More details

“Warm-up exercises”

are defined as dynamic (isotonic) exercises that:

- Result in a moderate increase in circulation.
- Move the joints through a range of motion that imitates the motions of the athletic event it precedes.
- Are low impact and low fatigue.

“Athletic events”

are defined as an event that:

- Strives for peak physical performance.
- Is high speed or high impact or high fatigue (or all three).

“Stretching exercises”

are defined as predominantly static exercises (isometric) that:

- Put tension on specific muscles to elongate the muscles and connective tissue.
- Restore or improve the range of motion of specific musculoskeletal joints such as shoulders, spine, hips, etc.



How does this research apply to workplace injury prevention?

Static stretching is recommended as a valuable part of a well-rounded fitness or rehabilitation program if the following guidelines are followed.

- Warm up before doing any kind of stretching exercises.
- Avoid stretching immediately before weight lifting, sprinting, or other activities (including work activities) that require explosive muscle power.
- Avoid pain. Experts agree that you should gradually improve your range of motion. It is normal and safe to feel tension increasing during a stretching exercise. But if you start to feel pain, back off the tension a bit.
- Use slow steady motions, and well-balanced positions, when stretching. Be aware that fast motions, or unexpected motions caused by loss of balance, can result in strains and sprains.
- Avoid bouncing motions. "Ballistic stretching" may be appropriate if guided by a well-informed trainer or coach. But bouncing while stretching has the potential to create small muscle tears and stiffness.
- Don't stretch a recently injured muscle unless directed to do so by your doctor or physical therapist.
- Stretching should be part of a fitness program that includes strength training and cardio; a healthy, injury-resistant body requires all three.

Articles that support dynamic warm up as beneficial for performance improvement and injury prevention

Amiri-Khorasani, M., Abu Osman, N.A., & Yusof, A. (2011). Acute Effect of Static and Dynamic Stretching on Hip Dynamic Range of Motion During Instep Kicking in Professional Soccer Players. *Journal of Strength and Conditioning Research*, February 24, 2011.

Kistler, B.M., Walsh, M.S., Horn, T.S., & Cox, R.H. (2010). The Acute Effects of Static Stretching on the Sprint Performance of Collegiate Men in the 60- and 100-m Dash After a Dynamic Warm-Up. *Journal of Strength and Conditioning Research*, 24 (9), 2280-2284.

Gelen, E. (2010). Acute Effects of Different Warm-Up Methods on Sprint, Slalom Dribbling, and Penalty Kick Performance in Soccer Players. *Journal of Strength and Conditioning Research*, 24 (4), 952-954.

McMillian, D. J., Moore, J.H., Hatler, B.S., & Taylor, D.C. (2006). Dynamic vs. static-stretching warm up: The effect on power and agility performance. *Journal of Strength and Conditioning Research*, 20 (3), 492-499.

Nelson, R.T., (2006). A comparison of the immediate effects of eccentric training vs. static stretch on hamstring flexibility in high school and college athletes. *North American Journal of Sports Physical Therapy*, 1 (2), 56-61.

Fowles, J.R., Sale, D.G., & MacDougall, J.D. (2000). Reduced strength after passive stretch of the human plantarflexors. *Journal of Applied Physiology*, 89 (3), 1179-1188.

Set aside a few minutes a day to help increase fitness and safety, download a poster with exercises at: saif.com/ergo

