

Workplace Stretching Programs

Frequently Asked Questions

What are musculoskeletal disorders?

Musculoskeletal disorders (MSDs) are also known as soft-tissue injuries, such as lower back pain or shoulder strains. These types of injuries are commonly related to such activities as repetitive lifting or working overhead.

Do workplace stretching programs physiologically reduce the risk of soft-tissue injuries?

In a thorough review of workplace stretching programs in an **industrial setting**, the research findings did not support a physiological change in the body that would reduce the risk of soft-tissue injuries. Similarly, the lack of well-designed research studies of stretching in an **office setting** is also not conclusive. While three recent studies did find reduced discomfort after implementing stretching breaks throughout the day, it is not known whether the improvements were due to stretching that caused a physiological change in the body or if it was just allowing employees to take regular work breaks. Based on the lack of supporting evidence, we would only recommend implementing a stretching program as a smaller component of an already effective formal safety program.

What should I consider when deciding if a stretching program makes sense for my organization?

While we can't say that a stretching program will without a doubt be beneficial to your employees, we do know that the proven tactics of identifying and mitigating existing hazards are effective. By identifying and evaluating hazards you may be able to eliminate your employees' exposure to injury. When conducting this evaluation, observe the following hierarchy of controls:

- **Engineering controls:** Can we design or engineer out the hazard? For example, can we use a conveyor to move a container rather than having the employees carry a heavy load?
- **Administrative controls:** Is it possible to limit employees' exposure to the hazard through job rotation and expanded job duties?
- **Work practice controls:** Can the way the job is performed be modified?
- **Personal protective equipment (PPE):** Would the use of PPE — such as knee pads or vibration dampening gloves — reduce the risk for injury?

What are some of the standard components I should consider for a stretching program?

Stretching programs are not “one size fits all” — as your employees and workplace are unique. For example, in an **industrial setting**, the following components would be essential due to the physical demands of the job:

- Participants should be screened to determine their baseline range of motion.
- A job-specific evaluation should be conducted to determine the physical demands of a job. For example, having a group of electricians perform stretches that could pull or tear an already overused shoulder rotator cuff is not advised.
- A general whole body warm-up of 5-10 minutes should be performed prior to doing any specific stretches. A cold muscle should never be stretched and a whole body warm-up that increases heart rate and blood circulation will reduce the risk of a stretching-related injury.

For both **industrial and office settings**, the following components should also be part of the program:

- If the stretching routine will be conducted in a large group, a group expert should lead the class making sure participants are using proper technique and form.
- Participants need to consistently participate in the stretching program in order to increase range of motion.
- The muscle stretch should be held in place for 30 seconds for each stretch in order to allow the muscle enough time to fully relax.

What is the difference between a fitness program and a stretching program? How do I know which one my company needs?

A stretching program may be one component of a fitness program. Keep in mind, flexibility — obtained from stretching — is only one of four main components of fitness. The other components are:

- Muscle strength
- Muscle endurance
- Aerobic capacity

Several studies have shown lack of muscle strength and fatigue to be significant factors in muscle injuries. If the goal is to prevent work-related MSDs through improving employee's fitness, then the focus should be on improving flexibility and increasing the employee's muscle strength, endurance, and aerobic capacity.

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Studies have also shown a pre-activity warm-up such as walking up stairs, arm circles, jogging in place can be effective at reducing MSDs by increasing blood flow to working muscle groups and increasing muscle temperature, elasticity, and oxygen delivery. Studies have shown stronger evidence for the injury prevention benefits of a dynamic warm-up than static stretching.

I used to participate in sports and we always stretched before a game or workout. Does stretching help prevent injuries?

The supposed benefits of pre-activity stretching have been heavily debated in the sports medicine literature recently. A systematic review of the sports medicine literature found insufficient evidence to endorse or discontinue routine stretching before or after exercise to prevent injury. The study found stronger evidence for injury prevention through warm-up, strength training and conditioning.

References

- Bandy W.D., Irion J.M., Briggler M., (1997). The effect of time and frequency of static stretching on flexibility of the hamstring muscles. *Physical Therapy*; 77: 1090–1096.
- da Costa B. R., Sanley S., Azevedo D., (2005). Short-term effect of stretching on the palpation pain threshold of the superior trapezius muscle: a double-blind study. *Proceedings of the XVI COBRA F (Congresso Brasileiro de Fisioterapia)*.
- da Costa B. R., Vieira, E. R., (2008). Stretching to reduce work-related musculoskeletal disorders: A systematic review. *J. Rehabil. Med.*; 40: 321–328.
- Hess, J. A., Hecker, S., (2003). Stretching at work for injury prevention: Issues, evidence, and recommendations. *Appl. Occ. and Environmental Hygiene*; 18(5): 331–338.
- Hubley-Kozey, C. L., Stanish, W.D., (1990). Can stretching prevent athletic injuries? *J. Musculoskel. Med.*; 7: 21–31.
- Kokkonen, J., Nelson, A. G., Cornwell, A., (1998). Acute muscle stretching inhibits maximal strength performance. *Res. Q. Exerc. Sport*; 69: 411–415.
- Mair S.D., Seaber A.V., Glisson R.R., Garrett, W.E., (1996). The role of fatigue in susceptibility to muscle strain injury. *American Journal of Sports Medicine*; 24(2): 137–143.
- Plowman S.A., (1992). Physical activity, physical fitness, and low-back pain. *Ex. and Sports Sci. Rev.*; 20: 221–242.
- Rubini E.C., Costa A.L., Gomes P.S., (2007). The effects of stretching on strength performance. *Sports Med.*; 37: 213–224.
- Safran M.R., Seaber, A.V., Garrett, Jr., W.E., (1989). Warm-up and muscular injury prevention: an update. *Sports Medicine*; 8(4): 239–249.
- Safran, M.R., Garrett, W.E. Jr., Seaber, A.V., et al, (1998). The role of warm-up in muscular injury prevention. *Am. J. Sports Med.*; 16(2):123–129
- Shrier I., (2007). Does stretching help prevent injuries? Evidence-based sports medicine In: MacAuley D, Best TM, editors. *Evidence-based sports medicine*. Second edn. Malden: Blackwell Publishing: p. 36–58.
- Shrier, I., Gossal, K., (2000). Myths and Truths of Stretching. *Individualized Recommendations for Healthy Muscles. The Physician and Sports Med.*; 28 (8).
- Smith C.A., (1994). The warm-up procedure: to stretch or not to stretch. A brief review. *J. of Orthop. Sports Phys. Therapy*; 19(1):2-17.
- Thacker, S. B., Gilchrist, J., Stroup, D. F., Kimsey, Jr., C. D., (2004). The impact of stretching on sports injury risk: A systematic review of the literature. *Med. and Sc. in Sports & Ex*; 36(3): 371–378.
- van Mechelen, W., Hlobil, H., Kemper, HCG. (1992). Incidence, severity, aetiology and prevention of sports injuries. *Sports Medicine* 14(2): 82–99.
- Worrell, T. W., Perrin, D. H., (1992). Hamstring muscle injury: the influence of strength, flexibility, warm-up and fatigue. *J. Orthop. Sports Phys. Ther.* 16:12–18.
- Young W.B., Behm, D.G. (2002). Should static stretching be used during a warm-up for strength and power activities? *Strength Conditioning J.*; 24: 33–37.

Does Pinnacol have any resources on stretching or fitness that it recommends?

Yes. You can schedule a free site visit and evaluation from your Pinnacol safety specialist. Additionally, policyholders have access to a wide variety of free resources that may be helpful to you and your employees. These include:

- Office Ergonomics DVD
- Proper Lifting Techniques poster
- Ergonomics Best Practices for Residential Carpenters and Framers