DoD Ergonomics Working Group NEWS

The Pros and Cons of a Sit-Stand Workstation

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Introduction

A sit-stand workstation is part of the evolution of the computer workstation. When the office workstation was transformed by the computer in the early 1980s, it was believed the proper ergonomic positioning was a static seated posture with the body positioned using the 90-90-90 rule in which the back-thigh angle was 90 degrees, the thigh-leg angle was 90 degrees, and the leg-foot angle was 90 degrees. By the 1990s, it was determined that a more neutral seated posture had all these angles being greater than 90 degrees. In the 2000s, it was found that sitting for long periods of time in a neutral posture did not prevent discomfort. Movement, such as leaving your workstation at least once an hour for 5-10 minutes, needed to be performed since frequent position changes help prevent work-related musculoskeletal disorders. **Today, good ergonomics practice dictates that some computer workers should work in a variety of postures to include sitting and standing.**

Rationale

In the past few years, the number of sit-stand workstations has increased. The prevalence of this type of workstation is causing people to ask if a sit-stand workstation is right for them. More people than ever before are working on computers, which translates into the computer workstation needing to adapt to more types of computer users. For example, people are working later in life and they may not be able to stand for long periods of time due to stress and trauma placed on their back over their lifetime. Conversely, there is a younger work population that has spent their whole life with computers. These workers are accustomed to working on computers in nontraditional postures and locations. **Whether due to physical condition or working preference, more is expected out of today's computer workstation.**
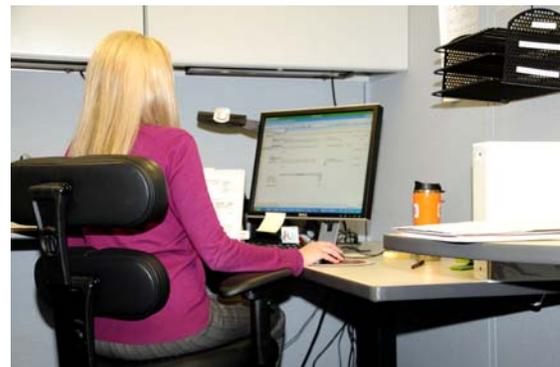
A systems accountant at Fleet Readiness Center East said, "I feel much better being able to alternately stand and sit throughout the day. The relief on my back makes an unbelievable difference."

Benefits

There is a perception that sitting is not hard on the back, but this is not entirely true.

- **Sitting when working** involves a backward rotation of the pelvis which, in turn, alters the curve of the back creating more disc pressure.

- **Standing when working** can cause stress to the back because muscle groups in the legs, hips, back, and neck are tensed when standing for a long period of time. Also, maintaining the same standing posture for long periods of time places the muscles in a constant state of contraction.

- **A sit-stand workstation** was developed to incorporate the benefits of both a seated and standing posture, with the ultimate goal being a computer user not having to choose between sitting or standing. A good ergonomic practice is adopting a variety of good postures throughout the workday. In fact, some ergonomists say "your best posture is your next posture."

Designing a Sit-Stand Workstation

Alternating between sitting and standing can reduce pressure on the vertebrae and increase circulation to the legs, as well as virtually eliminate lower back pain. A well-designed sit-stand workstation incorporates:

- Exceptional height ranges to accommodate all workers.
- Easy to move positions to make minor adjustments throughout the day.
- Easy to reach work equipment and other items.

These design features can be accomplished many ways by the use of one or more of the following items: bi-level adjustable desk, keyboard tray with at least a 12-inch vertical range of motion, monitor arms, and, if allowed, wireless keyboards and input devices.

Posture

You must be in a good standing posture when working at a sit-stand workstation. Be sure your neck is not tilted up or down when looking at the monitor, your arms and forearm are in a neutral posture (an elbow angle at or above 90 degrees will avoid nerve compression at the elbow), and your feet are firmly on the floor. Also keep in mind that research on sit-stand workstations is not complete. Although evidence suggests that there may be a reduction in back discomfort, the literature notes that past studies have not used adequate comparison groups. Additionally, there is no evidence that sit-stand workstations improve wrist posture when typing or mousing. Logically, the real benefit of sit-stand workstations is just that, changing between sitting and standing.

Do I Need a Sit-Stand Workstation?

- If you are currently happy with your workstation design, experience little or no back discomfort, have a job that requires you to frequently leave your desk during the course of the day, or have flexibility in your work schedule to leave your desk when you want, then you are most likely not a candidate for a sit-stand workstation.

- If you currently experience difficulty sitting for 30 minutes or less, you are likely a candidate for a sit-stand workstation. We also recommend that if a sit-stand workstation is being purchased, that it is easy to adjust and encourages an individual to change positions frequently.

The U.S. Army Public Health Command Ergonomics Program considers the most cost-effective way to obtain the benefits from sitting and standing is for healthy workers to sit in a neutral work posture and intermittently stand and move around doing other activities like making phone calls, getting coffee, making photocopies, etc., rather than trying to keyboard or use a mouse while standing.

**For more information, contact the
U.S. Army Public Health Command (Provisional)
Ergonomics Program at 410-436-3928.**