

## **Ergonomics: A Beneficial Tool of the Trade**

*by Zoe Robinette, President and Founder, Studio A, Inc.*

In architecture and the building industry, computers drive daily work. Design work, inventory, even reception areas are now partnered with computers, meaning more and more of the workforce is subject to possible muscle skeletal disorders (MSDs) from incorrect use of the computer and the work area.

One third of all workers' compensation costs come from MSDs. I've seen companies save literally millions of dollars in workers compensation costs and other injury-related expenses by taking a few simple measures to ensure their employees are trained to prevent on-the-job injury.

### **The Ergonomics Assessment**

Has your company had an ergonomics assessment from a professional? Ergonomics is essentially the study of the human at work. Ergonomics assessments target the work behaviors, body mechanics and work design that put the worker at risk for developing MSDs. Furthermore, an effective ergonomics program offers appropriate stretches, resistive and range of motion exercises with specificity to the job tasks your employees encounter.

It's simple to put such a program in place. Ergonomic specialists are available to consult on any aspect of a company's workforce. The ergonomic specialist will provide a comprehensive assessment documenting areas such as workstation set up, work organization factors, physical job demands, equipment measurements, body mechanics and postural tolerances.

Using standards in the industry to measure each component, the ergonomic specialist makes recommendations for specific administrative, engineering and safety controls. Engineering controls may include raising or lowering monitors, changing chair height, providing task lighting, or adding document holders, for example.

The primary objective of the ergonomic assessment is to identify ways to enhance performance and reduce fatigue. It will assess the human body's physiological response to the workload, looking at individual size and strength capabilities, as well as biomechanical models, human factors engineering and work organization factors.

The ergonomic specialist will identify and document any risk factors and recommend methods to reduce exposure. For example, inadequate task lighting may be found to be causing rounded shoulders, forward head postures and a forward lean – all of which fatigue the worker. The primary objective would be to achieve neutral postures from the employee's neck and shoulders through the spine and lower extremities to avoid muscle soreness and MSDs.

Engineers who utilize the incline drafting table and CAD set-up have two functional workstations. Careful consideration to avoid sustained, constrained and awkward postures in a bi-level work area is also essential.

Traditional ergonomic risk factors common in visual display terminals, CAD operations and engineering are:

- 1) Repeated and sustained postures while sitting and typing; horizontal reaching which could lead to shoulder, neck, and back MSD.
- 2) Contact Stress/mechanical stress; soft tissue compression, impeding blood flow and nerve conduction, from leaning/pressure on hard surfaces while typing, using the mouse, and writing which could result in micro-trauma to wrist and forearm.
- 3) Awkward postures; in particular forward lean away from back of chair, forward head and rounded shoulder postures while typing, writing, viewing CAD, side bending to utilize alternate work surface, and sliding a chair across work space.

Signs and symptoms of possible MSDs may include numbness, tingling and weakness in the arm and hand; pain in the neck, shoulder and arm; joint stiffness or loss of range of motion; weakness. Often workers self-diagnose carpal tunnel syndrome, when in fact it is the neck issue causing discomfort.

Each workstation and worker presents different issues requiring different solutions. Therefore, the best method of ensuring the most positive results is to conduct the ergonomics assessment before signs and symptoms of MSDs are present. Once the hurting starts, the MSD is present, and the worker will need a medical examination, treatment, possibly surgery and rehabilitation services.

Once the ergonomics consultant makes the assessment, a confidential report is presented, which provides strategies for improving all identified aspects of the situation.

If desired, the consultant will implement the recommended changes. In addition, health fitness training programs will be set up with stretches, exercises and work habits to reduce the potential risk of developing a MSD.

A word to the wise, companies will not realize the benefits of programs that are partially implemented or implemented incorrectly. Only with professional counsel and proper commitment to these issues can actual change and resulting savings take place.

In the final review, injury-prevention programs can end up being painless for both companies and employees. In fact, they pay for themselves quickly in reduced work related injuries, absenteeism and associated costs. And, a healthy workplace is a well-functioning one, which makes for good business in every respect.

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