Using Ergonomics to Keep Injury in Check

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Office ergonomics are not new to the healthcare industry. Medical transcriptionists and data entry employees are just two groups of healthcare workers that are affected by ergonomics on a daily basis. With a growing number of healthcare organizations implementing the computerized patient record, the issue of ergonomics, repetitive musculoskeletal disorders (MSDs), and injuries is rapidly moving out of the office and into the general healthcare environment. As a result, everyone from administrative assistants to physicians will need to understand office ergonomics.

Details of OSHA Final Rule

MSDs are disorders of the muscles, nerves, tendons, ligaments, joints, cartilage, blood vessels, or spinal discs. According to the US Department of Labor Occupational Safety and Health Administration (OSHA), each year, 1.8 million workers report work-related MSDs such as carpal tunnel syndrome, tendonitis, and back injuries caused by exposure to the following risk factors: repetition, force, awkward postures, contact stress, and vibration. About 600,000 of these disorders are serious enough to require workers to take time off to recover. In an effort to reduce the number and severity of MSDs, OSHA recently released its Final Ergonomics Program Standard.

The rule covers all employers (with a few exceptions) and addresses MSDs in the neck, shoulder, elbow, forearm, wrist, hand, abdomen, back, knee, ankle, and foot. Although most healthcare facilities routinely address ergonomic issues and pay special attention to keyboard use and repetitive data entry, this rule requires a structured response and documentation from employers.

Some of the benefits anticipated by implementation of the new rule include:

- 4.6 million MSDs prevented in the first 10 years
- 102 million workers at 6.1 million worksites protected
- $9.1 billion average savings annually
- $27,700 savings in direct costs for each MSD prevented

The rule would have required all employers to provide employees basic information about the following:

- common MSDs and their signs and symptoms
- importance of reporting MSDs and signs and symptoms as soon as possible
- how to report MSDs
- risk factors for MSDs
- job and work activities associated with MSD hazards

a brief description of OSHA's ergonomics standard

Employers are not required to take any further action until an employee reports an MSD or persistent signs or symptoms of an MSD, except receiving and responding to reports of injuries by the date above.

At press time, Congress had acted to repeal the rule, which was awaiting final action from President Bush. Watch the OSHA Web site at www.osha.gov for information.

Keyboards: The Culprit?

One of the major causes of repetitive musculoskeletal injuries might be sitting right in front of you: your keyboard. The layout of the letters on the keyboard was originally intended to maximize the separation of the most frequently used keys to reduce

jamming of mechanical keys in the first typewriters, enabling typists to increase their speed. This layout has remained a constant through manual typewriters to electric typewriters to computers.

Unfortunately, the keyboard's design can result in injury and discomfort from excessive and repetitive use. These injuries may include repetitive strain injury (RSI) (also known as cumulative trauma disorder), a condition of wear and tear on tendons, muscles, and nerves. Risk factors leading to RSI include repetition, force, and awkward posture. Carpal tunnel syndrome (CTS) is another well-known disorder and one of the most common repetitive injuries caused by repetitive hand and finger movement.

Several risk factors are associated with discomfort and repetitive injury when using a keyboard. These include:

- wrists bent to the sides when using side keys
- wrists bent back (extended) or forward (flexed) for prolonged periods
- wrists or palms resting for long periods on hard or sharp keyboard or work surfaces
- hands held actively over the keyboard during keying pauses
- rapid, sustained, or prolonged keying

Minimizing Workplace Injuries

How can typists minimize injury or discomfort? Keep in mind that keyboard position is a vital part of minimizing repetitive injury and discomfort. The keyboard should be located to allow a comfortable, neutral posture during use: in front of the typist, at seated elbow height, enabling shoulders and back to relax. The typist's elbows should be at an approximately 90-degree bend. Forearms should be parallel to the floor and wrists should be in line with the forearms. A slight backward tilt of the keyboard might be beneficial for wrist posture while typing.

Ergonomic-style keyboards can also help minimize injury and discomfort. There are several types of keyboards available, including the popular split keyboard. Some split keyboards are divided down the middle with a hinge allowing the halves to rotate to a comfortable angle. Other keyboards come in three parts: a left-hand section, a right-hand section, and a numeric keypad with all three sections mounted on a track that enables the keyboard to swivel and each section to rotate in three dimensions, giving typists a more natural way to hold their arms. For some typists, the split keyboard can be awkward to use and may decrease typing speed.

Under-desk keyboard drawers provide an alternative to the split keyboard. These drawers allow the keyboard to hang in front of the desk. A fully adjustable drawer can provide flexibility in the keyboard's height and angle in addition to being able to rotate the keyboard in various directions. Frequent typists may also want to consider using the pads that slip under most keyboards for wrist support.

Finally, keep in mind that one of the easiest ways to avoid injury is to take breaks. When using a keyboard, take a five-minute break every 20 minutes and work on other tasks. Relax your arms, dangle them at your sides, and get the blood flowing.

What does the future hold for keyboard users? What changes can be made to a device that has been in existence for decades? Perhaps the OSHA rule will be the driver for continued modifications in this area. And one can only speculate that with the increasing popularity and continued successful development of speech recognition, keyboards could become obsolete-which could create a whole new list of ergonomic risks.

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