

Using Speech

Integrating Speech Into The Big Picture of Ergonomics

by Robin Springer

"Ergonomics is about 'fit': the fit between people, the things they do, the objects they use and the environments they work, travel and play in. If good fit is achieved, the stresses on people are reduced. They are more comfortable, they can do things more quickly and easily, and they make fewer mistakes."

The Ergonomics Society (Europe)

When we are typing on the computer we may have one hand on the keyboard, our other hand on the mouse, our eyes on the screen. We are in a locked position. When we factor in talking on the phone without a headset or sitting in a maladjusted chair, the situation becomes worse.

Many people incorporate speech recognition into their work routines without realizing it is a tool to improve the design of the work environment. Speech-recognition technology is a huge step in improving the ergonomic "fit" in one's workplace, but it is just one of several components that need to be considered in creating a space with good ergonomic design.

Cumulative Trauma Disorders are caused by factors including force, vibration, constrained or awkward posture, repetition and static loading. Speech recognition decreases exposure to each of these risk factors by freeing the body, allowing us to move away from the keyboard when we dictate and away from the display when we are listening to our e-mail. But, if the workstation is not otherwise set up properly, we are still in a static posture, which contributes to injury.

While many people need to use speech recognition to restore lost function, the progression of the technology is providing more mainstream reasons for people to want to use their voices to interact with the computer. We use voice to increase productivity and profitability and to decrease overload and the risk of injury. Today, not only do we talk to our computers, our computers talk to us. This interaction is proliferating, incorporating itself into other aspects of our lives, including integration into PDAs and cell phones.

While utilization of speech provides freedom of movement, most people stop there, without modifying other aspects of their workstation design. Implementing speech recognition while still sitting in a chair that is not adjusted properly prevents us from taking full advantage of the technology.

"Once we have taken away the physical demands of typing and mousing, we can rethink the rest [of the workstation design]," says Rani Lueder, president of Humanics ErgoSystems Inc.

Lueder, an ergonomist and expert in occupational ergonomics and workplace safety, has

done extensive research on the subject of work related injuries and has found that when time at the computer is increased from two hours to four hours a workday the pain rate is approximately doubled. Further, increasing the time again from four hours to six hours a day at the computer, almost doubles the collective pain rate.

Based on statistics from OSHA, there were 500,000 fewer job-related injuries in 2001 than in the previous year, an eight percent decrease. The report further found a 10 percent reduction in Repetitive Trauma Injuries, including carpal tunnel syndrome. The Bureau of Labor Statistics reports injuries have decreased in each of the last nine years. While these statistics may sound encouraging, critics charge that these numbers may be misleading because of what many consider to be flawed reporting methods.

"Implementing speech is an opportunity to work a new way," says Lueder, who provides expert testimony on workplace safety, product design and child ergonomics.

So, for the individual who is a potential user of speech, or for the speech recognition veteran, Lueder recommends users complement speech by considering the following:

1. Seating

Become familiar with your chair and make adjustments in the following order:

1. Seat Height
2. Seat Depth
3. Backrest

Continued on page 41



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