

## Ergonomics of the Voice

July/August 2003

By Dr. Judith Markowitz

There was an excellent article on ergonomics by Robin Springer in a recent issue of STM (March/April 2003) that touched on a number of repetitive stress injuries (RSI). It also suggested precautions that one could take to reduce the chance of getting RSI.

### Economics of Ergonomics

Ergonomics is not simply good computing practice for individuals, it's also good business. The U.S. Government Accounting Office (GAO) findings based on more than 90 cases of programs revealed that successful ergonomic programs reduced injury rates by an average of 70 percent, reduced costs, raised morale and increased productivity. An article on ergonomics in 2000 *Business Insurance* magazine illustrated the GAO report by citing benefits accrued by three companies with well-established ergonomics programs:

- Intel started its program in 1992. Between 1993 and 1999, the rate of recordable cumulative trauma disorders fell 93 percent and the lost-day severity rate fell from 37.2 to 1.4.
- The city of San Jose, Calif., established its program combining ergonomics, return to work, safety and wellness in 1994. Between 1995 and 2000 it saved around \$6 million in incurred claim costs.
- 3M established its ergonomic program more than 15 years ago and considers it to be an essential smart-business practice that improves worker efficiency, health and productivity.

These and other findings have been so impressive that a number of organizations have published cost/benefit calculators companies can use to demonstrate the economic wisdom of ergonomics.

### Vocal Strain

OSHA-compliant (U.S. Occupational Safety and Health Administration) programs of office ergonomics center around prevention of musculoskeletal injuries to the back, extremities and eyes. Springer's column highlighted the value of speech recognition as an ergonomic technology for such injuries. Speech recognition has also been long recognized as an assistive tool for individuals who already suffer from RSI to the wrist and hand.

These reports are excellent, but virtually none of them includes RSI to the vocal cords. Our vocal cords consist primarily of ligaments and muscle tissue. They are remarkably strong and resilient but, like wrists, eyes, necks and backs, they can become tired and damaged by abuse and overuse. Furthermore, research has shown that people who are susceptible to other RSI injuries are also susceptible to vocal strain.

The symptoms of vocal strain and abuse range from hoarseness (most common) to pain. Those symptoms may indicate problems ranging from vocal fatigue and excess muscle tension – which may be addressed through ergonomic adjustments – to vocal nodules requiring surgery.

If you use speech recognition tools on a regular basis, as I do, then you are likely to benefit from ergonomic techniques for protecting your voice. Here are a few ergonomic “dos and don'ts” that are designed to protect your vocal cords from strain and damage:

### **Do**

- drink lots of water.
- take frequent breaks. This includes standing up and walking around.
- keep your jaw and neck muscles loose. There are lots of ways to do this, including stretching, head rolls and massaging the jaw and neck area.

### **Don't**

- whisper. Whispering actually puts more strain on the voice than speaking in a natural, relaxed manner.
- ignore your symptoms.

There are a number of resources on the Web that speak about vocal strain. Here are two useful ones:

### **Susan Fulton**

<http://http://www.out-loud.com>

click on “advice for the voice”

### **David Fox**

<http://cfa-www.harvard.edu/~dcfox/index.html>

### **Reference:**

Fletcher, Meg 2000 Ergonomics Efforts Work in Business Insurance January 31, 2000 Vol. 34(5), P. 1

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