

## **Office Ergonomics: Repetitive Strain Injury Preventable, Treatable, Costly to Ignore**

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Desktop computer technology represents the most advanced of 21st century science. In order to utilize this technology, however, we depend on hardware, which is responsible for chronic injury and significant productivity loss. This hardware was conceived over 150 years ago. Today's standard QWERTY keyboard was designed in the 19th century as a counter-productivity measure. Fast typists were perpetually snarling up their typewriters, which back then were mere alphabets on wire prongs. The QWERTY arrangement put commonly used letters at opposite ends to slow down data entry, a promise that still holds up today. The other desktop companion, the mouse, is a similar marvel of ingenuity, a plastic box on a monowheel using the mechanics of a wheelbarrow. This combination of a counterproductivity arrangement and early peasant design with the latest in computer technology must be the grandmother of all misfits.

Today's typical computer workstation setup can be responsible for a group of conditions called repetitive strain injury. The main symptom is pain, mostly in the forearms, wrists, hands, neck, and upper back. Other symptoms include numbness, lack of dexterity, and weakness. These symptoms often start insidiously. Pain may appear during times of intense activity and disappear when a deadline has passed. At a later stage, the pain can be prevalent during most of the day, only dissipating after working hours. It may not limit regular performance but will often spread from one area of the body to another. Even though

symptoms may be felt in just one forearm, it is common for the pain to spread to the rest of the arm, shoulder, and neck.

The underlying disease process is likely a gradually progressing and intensifying wear and tear of muscles, tendons, nerves, and joints that ultimately causes discomfort. Consequently, these body parts become more vulnerable to future strain. And there are probably other processes at work that can affect the release of chemicals that circulate in the blood. This process may cause fatigue, difficulties in concentration, and other performance-related issues possibly long before actual pain occurs.

At this point, each case of repetitive strain is thought to cost \$10-\$15k, on average, in direct and indirect costs. As a result, the national economy may carry an annual burden of \$100b. Many of these costs are real, but are rarely identified as such on balance sheets or annual reports. These costs occur because production suffers before the affected employee realizes the problem and takes action. Once symptoms appear, the employee may take personal days off, or even go on extended FMLA leave, in which case a replacement may need to be trained. Advanced, repetitive strain is a very frustrating condition with recurrent symptoms, despite proper treatment and workplace accommodation. It can be a career terminating illness and can lead to arduous litigation. With that said, all of these issues need consideration in the estimate of the total cost burden.

The first step in office ergonomics is risk assessment, i.e., which areas and employees may be at risk, and where should priorities be set?

### **Repetitive Strain Injury**

As an example, anyone who enters data into a computer more than 5-6 hours per day is clearly at risk. Check whether the workstation has an adjustable chair, a flexible keyboard tray with proper mouse space, and sufficient

lighting. Most importantly, make sure that the available equipment is properly used.

In one clinical study after another, one factor always proved decisive in outcomes: competent leadership. This includes sympathetic attention to the problem, knowledgeable intervention, and proper follow up. The psychosocial work environment, despite its disreputable name, plays a leading role in cost containment and constructive workplace development.

Competent treatment of injured employees is an important component of an ergonomic program. Not every medical provider is well suited to treating this type of condition. Experience and knowledge of the disease process is important, as is a close liaison within

the workplace. Identify knowledgeable providers in your area. Invite them to your facility or visit theirs. Discuss your concerns and ideas and understand their approach to this and other conditions. Occupational providers typically have experience in this area, as do physiatrists, neurologists, orthopedists, and interested primary care providers.

Prevention is, of course, the most cost effective option. Many firms may recognize the problem but find it hard to decide which first steps to take and how to roll out an effective program. Specialty organizations such as OEHN, are usually able to help. You can ask for brief telephone advice, or request an in-depth analysis. Either way, do not hesitate to call.