



IRS Workers Take a Break—For Ergonomic Safety and Productivity

By Traci Galinsky

If asked to think of an example of a physically demanding job, working on a computer may not be the first thing that comes to mind . . . unless you happen to be a computer worker.

During the past three decades, increased use of computers—or video display terminals (VDTs)—has been accompanied by an increase in musculoskeletal disorders referred to as cumulative trauma disorders or repetitive strain injuries. As the terms imply, these disorders are thought to result from physical stresses to the musculoskeletal system that are produced by repetitive movements and awkward or constrained postures.



The effects of these stresses begin to manifest as episodes of discomfort during work. Over time, these effects can accumulate to produce increasingly frequent and severe symptoms that may progress to disability. Workers performing computer-intensive jobs, such as data entry, commonly report recurrent musculoskeletal discomfort—particularly in the neck, shoulders, back, and arms.

In a typical work setting, the data entry operator is seated in a relatively unchanging posture, looking back and forth from paper documents to the computer screen while making repetitive keystrokes. Total keystrokes for one worker can range upwards of 50,000 to 70,000 per day.

Computer workers employed by the Internal Revenue Service (IRS) process hundreds of millions of tax forms each year. Recognizing the potential work-related hazards confronting IRS computer operators, the IRS and the National Treasury Employees Union (NTEU) formed a partnership to proactively assess and reduce these hazards. The partnership represented a rare and innovative departure from traditional labor-management relations, which can often be more adversarial than cooperative.

The first decision they made was to seek an objective third party that could provide scientific support to enhance their efforts to prevent injuries in their workers. They contacted the National Institute for Occupational Safety and Health (NIOSH) with this objective in mind. NIOSH is well known for its research on health problems among VDT users (see *NIOSH Publications on Video Display Terminals, 3rd Edition, Department of Health and Human Services [NIOSH] Publication No. 99-135, 1999*).

The IRS-NTEU partnership expanded into a trilateral collaboration among the IRS, NTEU, and NIOSH. The collaboration resulted in a series of studies evaluating a new work/rest schedule for IRS computer workers. The first of these studies was recently published in scientific literature (Galinsky, T., Swanson, N., Sauter, S., Hurrell, J., and Schleifer, L. [2000]. *A field study of supplementary rest breaks for data entry operators. Ergonomics, Vol. 43, No. 5, pp. 622-638*).

The study evaluated a new rest break schedule for data entry operators at one of the IRS Service Centers by comparing this schedule to the schedule conventionally followed by IRS workers (and by most computer workers in the private sector). The conventional rest break schedule contained two 15-minute rest breaks—one in each half of the workday—in addition to a 30-minute lunch. The new schedule contained

those same breaks, plus additional 5-minute breaks spaced throughout the workday. In an eight-hour work shift, this supplementary schedule provided four additional 5-minute breaks, for a total of 20 additional minutes of break time each workday.

Workers participating in the study performed their normal work task, which involved keying data from paper tax forms into a computer. They alternated between the conventional rest break schedule and the supplementary schedule in four-week intervals. They were encouraged to take at least a short walk during each break. Periodically throughout each work shift, they filled out a brief questionnaire to rate their levels of discomfort in various body parts, and their levels of fatigue and eyestrain.

Findings from the study are based on data collected from 42 workers over an eight-week period. Results indicated that the additional five-minute breaks provided under the supplementary schedule were effective in significantly reducing discomfort in the neck, back, shoulders, arms, hands, legs, and buttocks. Fatigue and eyestrain were also reduced significantly under the supplementary schedule. All of these symptoms were less likely to develop over the course of each workday under the supplementary schedule than under the conventional schedule.

Interestingly, the workers' data entry productivity and accuracy did not differ significantly under the two schedules. Thus, the beneficial effects of the supplementary rest breaks on worker comfort were not obtained at the expense of impaired work performance.

Much is known and written about the design of VDT workstations to help reduce musculoskeletal and eyestrain among computer users. However, our research at the IRS has demonstrated that optimizing the work/rest schedule is also an effective approach, and that it is practical and feasible to implement in the workplace. As a result of the positive outcome of this research, supplementary rest breaks have been permanently implemented at two IRS processing centers.

Traci Galinsky, Ph.D., is a senior research officer at the National Institute for Occupational Safety and Health (NIOSH). Visit the NIOSH home page at <http://www.cdc.gov/niosh>.

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Safe Workplace is produced by the National Council on Compensation Insurance, Inc. (NCCI), 901 Peninsula Corporate Circle, Boca Raton, Florida 33487.

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