

The role of ergonomics in providing reasonable accommodation

With the passage of the Americans With Disabilities Act (ADA) there exists an increasing need to be knowledgeable about reasonable accommodations. The ADA (Public Law 101-336) as passed on July 26, 1990 by the Congress of the United States prohibits discrimination against persons with disabilities. The ADA requires the employer to consider reasonable accommodations for workers with disabilities. In a 1997 advisory to the United States Congress, Representative Jim Bunning, Chair of the Social Security Subcommittee of the House Ways and Means Committee stated,

With the passage of the Americans with Disabilities Act societal attitudes have shifted toward goals of economic self-sufficiency and the right of people with disabilities to fully participate in society. Moreover, medical advances and new technologies now provide more opportunities than ever before for people with disabilities to work [2, p. 1].

Results of a poll conducted by the National Organization on Disabilities indicated 80% of persons with disabilities want to work and sixteen percent of those polled cited the need for special equipment or devices to do their work [6].

The rehabilitation professional specializing in ergonomics educates employers and business and industry on providing reasonable accommodations that are safe, functional, cost-effective and based on sound ergonomic principles. The rehabilitation professional also provides valuable input in creating work environments that incorporate the diverse functional requirements of workers, including those with injuries, chronic or progressive diseases, or the physical changes associated with aging. The skills required to evaluate the functional abilities of workers, teach injury prevention, analyze work tasks, and adapt tools and environments contribute greatly to the health and safety of the worker [3].

Jobs and workstations must be evaluated to identify how tasks can be made easier and how risky tasks can

be redesigned. Job analysis increases our ability to determine realistic and functional job modifications or reasonable accommodations [4].

It is through this process that employers will begin to recognize what persons with disabilities have to offer, and see the need for strategic recruitment and return to work plans that are non-discriminatory and provide for the health, safety, and accessibility of all workers.

Providing reasonable accommodations is not particularly difficult or prohibitive. Accommodations are typically low cost and easy to implement. According to data collected by the Job Accommodation Network (JAN), more than half of all accommodations cost less than \$500 and most employers report benefits in excess of \$5000.

The Job Accommodation Network outlines a process used by their Human Factors Consultants for determining successful reasonable accommodations. Included in the steps in that process are, defining the problem, considering the possibility of job modification, determining if a product or service exists that would solve the problem, considering alternative product use, modifying an existing or designing a new product, or considering alternative placement possibilities for the disabled individual.

When considering the above steps it is important to be aware of the role of ergonomics in the determination and design of reasonable accommodations. Ergonomics, as defined by Pheasant, "is the application of scientific information concerning human beings to the design of objects, systems and environments for human use. Ergonomics is the science of matching the job to the worker and the product to the user" [3, p. 4].

Several instances of the use and importance of ergonomics in determining reasonable accommodations are presented in the following examples.

Example 1

A 52-year-old male janitor at an elementary school with a history of back problems has been diagnosed

with severe degenerative disc disease. This employee was significantly limited in his ability to perform essential job duties. Through a functional job analysis, issues related to specific work tasks were identified. The job tasks required static and repetitive forward bending: twisting, pulling and lifting, to sweep and mop hallways and classrooms, and transport and empty trash bins.

Ergonomic solutions

The employer purchased lighter mop heads, which decreased the torque on the back when mopping. Mops, brooms, and trash bins were fitted with extension handles to minimize prolonged or repetitive forward bending. The employer also agreed that other workers could empty the trash bins into the dumpster, thus eliminating the lifting for the employee.

Example 2

A community planner with Multiple Sclerosis was experiencing increased fatigue when performing seated work tasks, and occasional difficulty with balance when standing and walking. His job required frequent use of the computer and telephone. He also needed desk space to work on special projects. The current set up of his work area had limited space and required projects to be cleared away to use the computer. The printer was across the room and required the employee to stand to operate it. The telephone had the standard receiver.

Ergonomic changes

The work area was redesigned to allow for both a computer work area and an area where projects he was working on could be left out on the desk. The employee was fitted with a telephone head set. The printer was positioned on the desk so it could be accessed from a sitting position. The braces supporting the work area were designed to provide adequate space for future wheelchair access.

Example 3

A laborer, with decreased strength and range of motion in his right shoulder following a traumatic accident, works in a glass manufacturing plant. Part of the job requires large pieces of glass to be moved to three different workstations for finishing and packaging. Because of the size of the pieces, safety policy requires they be handled by a three-person team. The employee with the shoulder problem is unable to lift the glass pieces and therefore cannot assist his team.

Ergonomic solution

The employer purchases a vacuhoist that automatically lifts the glass pieces. The hoist is operated by a suspended adjustable hand control. The employee is now able to perform the tasks needed to finish and package the glass. The installation of the vacuhoist has benefited all employees by eliminating the need to manually lift the larger glass pieces.

Example 4

A medical records clerk who was unable to hear needed to have a way to get information from an orientation session held for all new employees.

Ergonomic solution

The employer hired a sign language interpreter to be available to the employee for the full two days of the orientation session.

Example 5

An employee with a seizure disorder worked in a fast food restaurant. The french fry machine would flash a red light signaling employees to remove the fries from the cooker. The flashing light had triggered a seizure in the employee, which not only compromised the employee's safety but had the potential to pose a safety issue for the other workers.

Ergonomic solution

The employer replaced the flashing light on the french fry machine with a buzzer. The buzzer did not trigger seizures in the employee, thus allowing her to perform her job duties safely, and continue working in the fast food restaurant.

Example 6

A maintenance person with low vision was having difficulty seeing the carpeted area he was vacuuming.

Ergonomic solution

A special light was mounted on his industrial vacuum cleaner thus allowing him adequate vision to successfully complete the cleaning task.

Summary

As evidenced by the above examples, the rehabilitation professional who wishes to specialize in ergonomics must be familiar with mechanisms of workplace injuries, human performance, biomechanics, job task analysis, workplace health and safety, industrial and systems engineering, psychological issues, environmental and industrial design, job site modifications, accommodations and accessibility, and business.

Determining reasonable accommodations through the use of ergonomics is an important step in providing an environment of inclusion at the workplace for individuals with physical or mental disabilities. A successful work transition will require a disability-sensitive workplace free of physical, mental, and attitudinal barriers thus allowing an inclusive environment for all workers.

For those of you working in the area of Rehabilitation Ergonomics, the Job Accommodation Network (JAN) can be a valuable resource. JAN is an international toll-free service that provides information about job accommodations and the employability of persons with disabilities. JAN provides assistance to employers, rehabilitation professionals, and persons with disabilities. The Job Accommodation Network in the United States is a service of the President's Committee on Employment of People with Disabilities and can be reached at 1.800.526.7234. The Job Accommodation Network of

Canada (JANCAN) is a service of Human Resources Development Canada/Canadian Council on Rehabilitation and Work and can be reached at 1.800.526.2262.

References

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