

## **Ergonomics**

(Reviewed 9/16/2008)

1. Policy statement. Ergonomics is the study of work that attempts to design the work environment to fit the employee's physical capabilities and limitations. The USGS is committed to preventing injuries associated with ergonomic hazards. Through training, workplace evaluation, and redesign the Bureau hopes to greatly reduce the number and severity of musculo-skeletal injuries experienced in the workplace.
  
2. Definitions.
  - A. Ergonomics. The science of studying the worker in the workplace. Ergonomics involves applying the knowledge of human strengths and weaknesses to the design of workplaces, jobs, tasks, tools, equipment and the environment.
  
  - B. Musculoskeletal Disorders (MSD's). This includes a number of injuries to muscles, tendons, ligaments, nerves, joints, bones, and supporting blood vessels in the upper or lower extremities or back. Such injuries include back injuries, carpal tunnel syndrome, and Raynaud's syndrome. These conditions are caused by ergonomic hazards in the workplace such as awkward positioning, repetition, force, mechanical compression, vibration and duration of operation. MSD's result from the cumulative effect of repeated traumas to a particular part of the body. Cumulative trauma occurs when rest or overnight sleep fails to completely heal these small "microtraumas" that carry over and adds to the total effect on the body. Over time this can result in permanent damage or disability.
  
3. Responsibilities.
  - A. Managers/Supervisors. In consultation with employees, they:
    - (1) Identify ergonomic hazards and the associated risks relating to poor design of tools, equipment, workstation, or work practices.
  
    - (2) Provide all employees with adequate equipment for the tasks they are performing.
  
    - (3) Provide employees information, instruction, and training on ergonomics and the signs and symptoms of work-related musculoskeletal disorders so that they will recognize ergonomic hazards and understand the importance of early intervention in the prevention of these disorders.
  
    - (4) Encourage and reinforce proper work techniques and use of mechanical assist devices or specially designed tools.

(5) Encourage the early reporting of symptoms or injuries related to cumulative or traumatic stress (All recordable MSD's will be reported using the SMIS system).

(6) Facilitating medical intervention for individuals reporting a MSD.

B. Regional Safety Managers/Regional Ergonomics Advisor.

(1) Promotes the Bureau ergonomics policy to locations in the field and assist them when necessary in developing their own local programs.

(2) Acts as a regional advisor to supervisors and collateral duty safety officers to assist them when necessary with evaluating work areas, interpreting those evaluations, and making suggestions for improvements to work areas with identified ergonomic hazards.

C. Collateral Duty Safety Officers.

(1) Assist management with the assessment of work areas that have been identified as having ergonomic risk factors or have documented work-related musculoskeletal disorders.

(2) Participate in any ergonomic-related training made available to them so that they can better advise management when ergonomic-related situations arise.

(3) Collaborate with the Regional Safety Manager when problematic situations outside of their scope of experience are encountered.

(4) Recommend to management changes that should be made to the work environment to control or eliminate the ergonomic risk factors.

D. Employees.

(1) Participate in any ergonomics training provided for them.

(2) Use equipment provided for them properly, as instructed (no short cuts).

(3) Employ proper work techniques such as proper lifting and using devices to assist in lifting.

(4) Provide input to supervisors on workstation design to enhance their comfort when performing repetitive or awkward tasks.

(5) Report any on the job injuries that occur to their supervisor immediately.

4. Procedures.

- A. Identification of ergonomic hazards is essential to preventing MSD's. There are two basic ways workplace evaluations can be accomplished. One is to be proactive and identify ergonomic hazards while conducting the supervisory job hazard analysis. The other is reactive and evaluates the work area once a complaint is raised or an injury is reported. Of the two, obviously the first is preferable because it identifies the potential hazards upfront and prevents the injury from ever occurring.
- B. Employees experiencing discomfort related to their work must bring this issue to the attention of their supervisor. In turn the supervisor will determine what steps need to be taken to report the injury and to evaluate the work area. The supervisor, in conjunction with the employee, will determine whether medical evaluation is required to determine the extent of the injury and to evaluate duty status. It is the responsibility of the agency to provide medical care for MSD's. The actual work relatedness and payment of medical expenses will be determined by the Department of Labor under the Federal Employees Compensation Act.
- C. Once duty status has been determined it is the supervisors responsibility to accommodate the work restrictions (light duty) as outlined by the employees physician. Every attempt should be made to keep the employee at work, if there are tasks that they can accomplish within their physicians recommended restrictions.
- D. Once the evaluation of a work area has occurred, it is the responsibility of the supervisor to follow-up on the recommended changes to the work area.
- E. The primary means of controlling and preventing MSD's should be by eliminating the hazard or process. If that is not possible, engineering/mechanical controls may be employed such as using mechanical means to lift heavy objects. When that is not feasible, you would use administrative controls such as job rotation to eliminate the amount of time the person has to perform a particular task. For instance, part of the shift performs one task such as grinding paint from a piece of equipment in the morning while the other half of the shift stencils shipment crates or completes administrative work. In the afternoon the groups switch places. Finally, if all those methods are ineffective, personal protective equipment (PPE) is a last resort. Examples of PPE would be the wearing of hearing protection or anti-vibration gloves.

- F. Job Hazard Analysis. Supervisors must complete a job hazard analysis (JHA) of all work processes in their area of responsibility. Things to look for when considering ergonomic hazards would be tasks that require frequent bending and twisting, awkward body positioning, constant, repetitive motion, or lifting of heavy or unstable/awkward loads. Jobs that require the body to be outside of its neutral position for long periods of time will lead to fatigue and possible injury. Jobs where employees stand for long periods of time on hard surfaces can be stressful. Likewise, sitting for long periods of time can also create a tremendous stress on the body. Equipment or power tools that vibrate can also cause injury to muscles, nerves, and connective tissues over time. It is important to be able to provide a work area that maintains the body in a relatively neutral position where either standing or sitting is important. Individuals in administrative positions should be encouraged to take mini-breaks to stretch and stand up every hour or so. This provides needed rest, which has been shown by research to greatly reduce the risk of injury.
- G. For unique or problematic situations, the Regional Safety Staff or the Bureau Safety and Environmental Management Office can be contacted for assistance. Telephone numbers for the Regional Safety Managers or Regional Safety Officers can be obtained from the USGS Web site. The Bureau Industrial Hygienist can be reached at 703-648-7345.