

SINGLE SOURCE SAFETY DOCUMENT

CHAPTER 12

ERGONOMICS PROGRAM

12-1. GENERAL. This program establishes policies, responsibilities, and procedures for implementing the Fort Hamilton Ergonomics Program providing guidance to recognize, control, and prevent work-related musculoskeletal disorders. Command emphasis, commitment by management, and demonstrated visible involvement are imperative to provide the organizational resources and motivation necessary to implement a sound ergonomic policy. All commanders, leaders, managers, and supervisors will ensure that each workstation or environment in their area of responsibility is fitted to the person(s) assigned to that workstation.

12-2. DEFINITIONS.

a. Ergonomics: Fitting the job to the person, not the person to the job. This is achieved by evaluating and designing workplaces, tasks, equipment, and processes in relation to human capabilities and interactions.

b. Workplace Risk Factors: Actions or conditions in the workplace that may cause or aggravate a work-related musculoskeletal disorder. Examples include repetitive, forceful, or prolonged exertions; frequent or heavy lifting; pushing, pulling, or carrying heavy objects; awkward posture; contact stress; and localized or whole-body vibration.

c. Musculoskeletal Disorder: An injury or illness of the muscles, tendons, ligaments, peripheral nerves, joints, cartilage, bones, and/or supporting blood vessels in either the upper or lower extremities, back, or neck. Examples are cumulative trauma disorders and repetitive strain or motion injuries or illnesses.

12-3. RESPONSIBILITIES.

a. The Installation Safety Office:

(1) Evaluate employee workplaces for ergonomic problems upon request of supervisors, or employees and make recommendations and modifications for corrections.

(2) Develop and teach a train-the-trainer workshop as needed.

(3) Assist directors, commanders, and supervisors in resolving ergonomic-related issues.

(4) Develop and disseminate ergonomic awareness materials.

(5) Maintain and review injury and illness records related to musculoskeletal disorders to develop trend analysis and countermeasures.

(6) Assist supervisors in preparing job hazard analyses when needed.

(7) Chair the Ergonomic Committee and hold quarterly meetings.

b. Ainsworth Clinic:

(1) Assist in evaluating the workplace for ergonomic problems and make recommendations and modifications for corrections.

(2) Assist in conducting ergonomics training as needed.

(3) Provide technical assistance in identifying and resolving ergonomic issues.

c. Directorate of Contracting:

(1) Ensure that when activities purchase new furniture, it is ergonomically designed.

d. Directorate of Public Works and Contractors:

(1) Ensure ergonomics considerations are an integral part of the design, modification, and construction of all facilities.

(2) Consult with trained ergonomic personnel concerning facility modifications and construction.

e. Commanders and Directors:

(1) Establish and implement an ergonomics plan at Figure 12-1.

(2) Ensure supervisors are trained on ergonomics awareness factors applicable to their area of responsibility.

(3) Ensure area of responsibility is periodically evaluated for identification of ergonomic deficiencies and take appropriate corrective action.

(4) Ensure ergonomic considerations are included in all job hazard analyses.

f. Supervisors:

(1) Develop and implement an ergonomics plan applicable to their area of responsibility.

(2) Provide ergonomics awareness training to employees in their specific work tasks and procedures for recognizing and reporting early signs of work-related musculoskeletal disorders.

(3) Conduct job hazard analyses (JHA) and identify tasks that pose a risk of musculoskeletal disorders, evaluate the tasks, and ensure the risks are reduced or eliminated.

(4) Ensure personnel workstations are properly setup and personnel are trained to properly adjust their furniture and equipment.

(5) Ensure proper use of work/rest breaks which can vary according to the job's physical and psychological demands.

(6) Provide protective equipment to reduce potential ergonomics injury or illness while engineering controls are implemented.

(7) Ensure ergonomic considerations are being integrated into the purchase of new furniture.

(8) Detect early signs of musculoskeletal problems of personnel such as frequent reports of aches and pains or job tasks requiring repetitive, forceful exertions.

(9) Send personnel with signs of musculoskeletal disorders to Occupational Health Clinic along with completed Fort Hamilton Form 1051, Record of Injury. Also contact the Installation Safety Office for workstation evaluations.

g. Individuals:

(1) Assist supervisors in identifying ergonomic hazards.

(2) Report symptoms of possible work-related musculoskeletal disorders or related injuries or illnesses.

(3) Take mini breaks or perform a different task if more than one hour.

12-4. PROCEDURES. Ergonomic considerations will be integrated in the job hazard analysis process and conducted in accordance with Army regulations. Worksite analysis implementation of ergonomic hazard control measures will be performed in conjunction with the job hazard analysis.

a. Worksite analysis. Problem or hazard identification and detail analysis are essential steps in conducting worksites analysis.

(1) Problem or hazard identification. Identification of jobs or worksites with ergonomic risk factors is the first step in the prevention of ergonomic hazards. This is accomplished by

direct observation, case referrals, and incident reports. Direct observation may be done by trained personnel or by workers who can identify task or situations which are uncomfortable and may indicate ergonomic risks. Case referrals from Occupational Health Nurse, Industrial Hygienist, or safety personnel may be used to identify a work area with potential ergonomic risk. For example, a computer technician seeks medical care for hand or wrist pain and provides an occupational history that indicates possible worksite risk factors. In this situation, the referral would be from the Occupational Health Nurse to the supervisor. Specific health or performance events such as wrist pain, back pain, or increased mishaps may be indicative of ergonomic risks. Incident reports such as accident reports, occupational and health reports, and supervisor monthly surveys are used to help identify ergonomic risk factors. The following are risk factors that contribute to ergonomic related disorders that should be considered in identifying ergonomic problems or hazards:

- (a) Repetitive motions (especially during prolonged activities).
- (b) Sustained or awkward postures.
- (c) Excessive bending or twisting of the wrist.
- (d) Continued elbow or shoulder elevation (e.g., overhead work).
- (e) Forceful exertions (especially in an awkward posture).
- (f) Excessive use of small muscle groups (e.g., pinch grip).
- (g) Acceleration and velocity of dynamic motions.
- (h) Vibration.
- (i) Mechanical compression.
- (j) Restrictive workstations (e.g., inadequate clearances).
- (k) Improper seating or support.
- (l) Inappropriate hand tools.
- (m) Machine-pacing and production based incentive.
- (n) Extreme temperatures.
- (o) Extended exposure to noise.

(2) The combined effect of several risk factors in a job workstation may lead to a higher probability of causing an ergonomic disorder.

(3) Detailed analysis. Detailed analysis is necessary for further evaluation of those jobs or worksites. Personnel conducting analysis should systematically:

- (a) Consider the concept of multiple causation.
- (b) Look for trends including age, gender, work task, and time of injury.
- (c) Identify the work task or portions of the process which contain risk factors.

b. Prevention and control of ergonomic hazards. The primary method of preventing and controlling exposure to ergonomic hazards is through effective design (or redesign) of a job or worksite. The following are intervention methods in order of priority for preventing and controlling ergonomic hazards:

(1) Process elimination. Elimination of the ergonomically demanding process essentially eradicates the hazard. For example, eliminating a meat wrapper's need to use a manual tape dispenser and label applicator by providing an automatic label and tape dispenser.

(2) Engineering controls. Ergonomic engineering controls redesign in the worksite or equipment to fit the limitations and capabilities of workers. Equipment or worksite redesign typically offers a permanent solution; for example, the provision of a visual display terminal (VDT) workstation which is adjustable over a wide range of anthropometric dimensions.

(3) Substitution. Substituting a new work process or tool (without ergonomic hazards)

for a work process with identified ergonomic hazards can effectively eliminate the hazard. For example, replacing hand tools which require awkward wrist positions (extreme wrist flexion, extension, and or deviation) with tools which allow a neutral wrist posture.

(4) Work practices. Practices which decrease worker exposure to ergonomic risks include changing work techniques, providing employee conditioning programs, and regularly monitoring work practices. It also includes equipment maintenance, adjustment, and modification of current equipment or tools, as necessary.

(a) Proper work techniques include methods that encourage correct posture, use of proper body mechanics, appropriate use and maintenance of hand and power tools, and correct use of equipment and workstations.

(b) Trained ergonomic personnel in consultation with Occupational Health should identify those jobs that require a break-in-period. Occupational Health should evaluate those employees returning from a health absence and define the break-in period for each individual employee.

(c) Regular monitoring of operations helps to ensure proper work practices and to confirm that the work practices do not contribute to cumulative trauma injury or hazardous risk factors.

(d) Effective schedules for facility, equipment, and tool maintenance, adjustments, and modifications will reduce ergonomic hazards. This includes ensuring proper working condition, having sufficient replacement tools to facilitate maintenance, and effective housekeeping programs.

(5) Administrative controls. Administrative controls can be used to limit the duration, frequency, and severity of exposure to ergonomic hazards. Examples of administrative control include (but are not limited to):

(a) Reducing the number of repetitions by decreasing production rate requirements and limiting overtime work.

(b) Reducing the speed and number of repetitions by reducing line and/or production speed or by having worker input into production speed, e.g., using worker-based rather than machine-based production speed.

(c) Providing rest breaks to relieve fatigued muscle-tendon groups. The effort required, total cycle time, and the muscle-tendon group involved should determine the length of the rest break.

(d) Increasing the number of employees assigned to the task, e.g., lifting in teams rather than individually.

(e) Instituting job rotation as a preventive measure, with the goal of alleviating physical fatigue and stress to a particular set of muscles and tendons. Job rotation should not be used in a response to symptoms of cumulative trauma, as this can contribute to symptom development in all employees involved in the rotation schedule rather than preventing problems. Trained ergonomic and health care personnel should conduct analysis of the jobs used in the rotation schedule.

(f) Providing limited duty assignments to allow injured muscle-tendon groups time to rest, assisting in the healing process. Limited duty assignments should be provided when physical limitations (as identified by a health care provider) allow the worker to return to work performing less than their normal work requirements.

(6) Personal protective equipment (PPE). Personal protective equipment is not necessarily recommended for controlling exposure to ergonomic hazards, as little research has

been conducted to support the claims of its usefulness.

(a) Ergonomic appliances such as wrist rests, back belts, back braces, etc., are not considered to be personal protective equipment. Consultation with trained ergonomic personnel on the effectiveness of such devices should be made prior to purchase.

(b) PPE should be provided in a variety of sizes, accommodate the physical requirements of workers and the job, and should not contribute to ergonomic hazards.

c. Health care management. Early recognition and medical management of ergonomic disorders are critical to reduce the impact of injury on both the employee and employer.

(1) Common symptoms of musculoskeletal ergonomic disorder can include, but are not limited to, pain, tingling, numbness, stiffness, and weakness in the neck, shoulders, arms, hands, back, and legs. Other symptoms can include headaches, visual fatigue, and increased errors.

(2) Soldiers and employees with symptoms of ergonomic disorders should report to medical personnel for an evaluation. Active duty soldiers should report to their primary care provider.

(3) Supervisors should ensure that symptomatic soldiers and employees report for a medical evaluation in a timely manner.

d. Training and education. The Installation Safety Office in conjunction with Ainsworth Clinic will conduct train-the-trainer ergonomic education for designated collateral duty personnel.

(1) Training curriculum. Training will consist of, but not be limited to the following:

- (a) The potential risk of ergonomic disorders.
- (b) The possible causes and symptoms.
- (c) How to recognize and report symptoms.
- (d) The means of prevention.
- (e) The sources of treatment.

(2) Types of training.

(a) General. Employees who are potentially exposed to ergonomic hazards should receive formal instruction on hazards associated with their jobs and equipment. This training could be conducted at the initial orientation and annually thereafter.

(b) Specific training. New employees and reassigned workers should receive an initial orientation and hands-on training prior to being placed in a full production position. The initial orientation should include a demonstration of the proper use, care, and operating procedures for all tools and equipment; use of safety equipment; and the use of safe and proper work procedures such as proper lifting techniques.

12-5. REFERENCE.

- a. 29 CFR 1960
- b. ANSI Standard 100
- c. DOD 6055.1
- d. AR 40-1

SAMPLE ERGONOMIC PLAN

Each activity is required to have a written plan for ergonomics. Commanders, directors, and supervisors at each level will establish and maintain a continuing comprehensive and aggressive ergonomic program throughout areas of responsibilities.

Activity Ergonomic Plan

1. PURPOSE. To establish a plan for integrating ergonomic standards fitting the work environment to the worker.
2. REFERENCE. Fort Hamilton Single Source Safety Document, Chapter 12.
3. SCOPE. This plan outlines the information needed to carry out the procedures and responsibilities in the implementation of ergonomic standards in the work environment.
4. OBJECTIVE. To reduce the risk of ergonomic-related injuries increasing productivity, job satisfaction, and the quality of work; decreasing lost time from work and costs; and ultimately improving the quality of life.
5. POLICY. All personnel will support and participate in the ergonomic program.
6. RESPONSIBILITIES. Include responsibilities listed in paragraph 3 of this chapter and any other additional responsibilities required in specific work areas.
7. PROCEDURES. Procedures shall be set in accordance with this chapter and specific activity procedures and requirements.

SIGNATURE
Commander/Activity Director

Figure 12-1