

C-7. **ERGONOMICS PROGRAM**

I. **PURPOSE**

The purpose of the Ergonomics Program is to establish a system for the identification, evaluation, and control of ergonomic risk factors in the workplace. The goal of the ergonomics program is to maximize employee health, safety, efficiency, and productivity by matching the requirements of the job with the abilities of the worker. Measurable outcomes are:

- increased productivity
- reduced worker compensation/medical costs.
- reduced absenteeism and job turnover
- improved employee morale

II. **DEFINITIONS**

Ergonomics - The science of fitting machines, tools, and work processes to match human characteristics and capabilities. Ergonomics is a multidisciplinary activity dealing with the interaction between man and his total working environment including environmental aspects such as atmosphere, heat, light, and sun, as well as tools, work processes, and equipment of the workplace.

Ergonomic Solutions Team - A multidisciplinary team responsible for identifying potential ergonomic risk factors in the workplace and for implementing appropriate prevention or intervention strategies. Members of the team will be specific to the risk factor analysis or department and may include all of the following:

- Ergonomics Program Coordinator
- Occupational Health Services
- Safety
- Engineering
- Finance
- Management
- Supervisors
- Employees
- Contracted Ergonomist (as needed)

Potential Ergonomic Risk Factors - Excessive force, awkward or non-neutral postures, static postures, repetitive motion, mechanical stress, prolonged sitting/standing, vibration, contact stress, cold temperatures, and poor lighting.

Work Related Musculo-skeletal Disorders (WRMSD) - Disorders that affect the tendons, muscles, ligaments, and related bones and nerves, which are caused, precipitated, or exacerbated by repeated, forceful exertions of the body, especially if in combination with awkward or non-neutral postures and prolonged duration.

III. **RESPONSIBILITIES**

A. NCI-Frederick Management

1. Assist in the development, implementation, and management of the Ergonomics Program as needed.
2. Provides financial support to the Ergonomics Program in the annual budget.

B. Employees

1. Participate in worksite evaluations, symptom surveys, and ergonomic hazard analysis.
2. Attend ergonomics training sessions.
3. Practice early reporting of symptoms of cumulative trauma disorders to supervisors and OHS.
4. Utilize proper body mechanics and recommended work processes.

C. Supervisors

1. Participate in worksite analysis and ergonomic hazard analysis.
2. Participate on the ergonomic solutions team.
3. Refer employees with complaints of chronic musculoskeletal pain symptoms to OHS for early diagnosis and treatment.
4. Utilize ergonomic principles when designing work practices and procedures.

5. Train employees in the use of proper body mechanics in their work setting.
 6. Ensure subordinate's attendance at ergonomics training sessions.
- D. Occupational Health Services (OHS)
1. Provides prompt assessment, treatment, and follow up to employees reporting work-related musculoskeletal disorders.
 2. Communicates restricted duty work requirements to supervisors.
 3. Documents all cases in accordance with OSHA requirements and OHS policy.
 4. Ensures confidentiality of health information and records.
 5. Supports ergonomics training initiatives.
 6. Participates on the ergonomic solutions team.
- E. Engineering
1. Applies ergonomic principles to new work station and product design and to the evaluation of potential problems identified by the ergonomics team.
 2. Participates on the ergonomic solutions team when needed.
 3. Participates in the resolution and correction of identified ergonomic hazards.
- F. Occupational Safety Branch (OSB)
1. Identifies potential ergonomic problems and contributing ergonomic factors during:
 - a. Process reviews
 - b. New equipment sign offs
 - c. General site visits
 - d. Accident and incident investigations
 - e. Ergonomic evaluation requests

2. Communicates findings in writing to Occupational Health Services and the ergonomics solutions team for review and action.
3. Participates in ergonomic audits.
4. Participates on the ergonomic solutions team.
5. Performs worksite investigations.
6. Performs ergonomics equipment and furniture evaluation.

G. Ergonomic Solutions Team

1. Meets periodically for program and project development, review and evaluation.
2. Conducts worksite analysis to identify ergonomic risk factors.
3. Evaluates effectiveness of ergonomic intervention strategies.
4. Provides reports to Management of actions and activities.

IV. **PROGRAM ELEMENTS**

A. Worksite Analysis

1. Identifies and documents ergonomic risk factors. Methods include:
 - a. Walkthroughs of work areas;
 - b. Analysis of tool design, equipment, furniture, and work processes;
 - c. Measurement for proper adjustments;
 - d. Employee interview and surveys;
 - e. Injury and illness reports and trend analysis;
 - f. Documentation of existing or potential ergonomic hazards by members of the ergonomics team.

B. Prevention and Intervention Strategies

Depend on such factors as risks, costs of interventions, and presence of symptomatic individuals. The most effective intervention is the elimination of the risk.

1. Control strategies, in order of preference include:
 - a. Engineering Controls:
 - i. Work station design
 - ii. Work methods which reduce awkward or static postures, repetitive motion, or excessive force
 - iii. Tool design
 - b. Administrative Controls:
 - i. Adjustment of hours and production rates
 - ii. Rest periods, reassignment, job rotation, job enlargement
 - iii. Tool maintenance
 - iv. Housekeeping
 - v. Training in basic ergonomics principles

C. Health Management

Eliminates or reduces the risk of developing cumulative trauma disorder signs and symptoms through an effective program which includes:

1. Baseline health surveillance;
2. Early recognition and reporting of symptoms, injuries, and illnesses associated with cumulative trauma;
3. Early case identification and access to care;
4. Systematic medical evaluation;

5. Early conservative treatment or referral;
6. Case management for successful re-integration of employee to work.

D. Training and Education

1. Provides employees with appropriate information regarding:
 - a. Ergonomic risk factors associated with their job.
 - b. Prevention and control of ergonomic risk factors associated with their job.
 - c. Health consequences and early symptoms of cumulative trauma disorders.
 - d. Actions to follow if cumulative trauma symptoms occur.
 - e. Provides job specific training to:
 - i. Employees
 - ii. Engineers
 - iii. Maintenance personnel
 - iv. Supervisors
 - v. Managers

V. **RECORDKEEPING**

- A. Existing OHS, safety, worker compensation insurance records, and OSHA 300 logs are analyzed for evidence of injuries or disorders associated with cumulative trauma disorders.
- B. Ergonomic analyses of work areas identified by employees or management will be documented by OHS, OSB, and/or the ergonomic solutions team.
- C. Documentation is maintained confidentially, on site, for the duration of employment plus 30 years.
- D. Information is evaluated annually by the ergonomics team. Analysis of

trends is presented to management and employees by the ergonomics solutions team as necessary.

VI. **REFERENCES**

OSHA 29 CFR1910 General Duty Clause

OSHA 3123 Ergonomics Program Management Guidelines for Meatpacking Plants

NIOSH Document Applications Manual for the Revised NIOSH Lifting Equation [DHHS (NIOSH) Publication No 94-1 10]

Guidelines for an Occupational Health and Safety Service, AAOHN Publications, Atlanta GA, 30324-3176