Ergonomics Program

DARTMOUTH

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Section 1 - Purpose

Ergonomics is the science of fitting workplace conditions and job demands to the capabilities of the working population. In the workplace, the number and severity of work-related musculoskeletal disorders (WMSDs) resulting from physical overexertion and their associated costs can be reduced by applying ergonomic principles. This Ergonomics Program ensures workers know about ergonomic hazards and the steps to protect themselves and others.

Section 2 - Scope

Employers are responsible for providing a workplace free from recognized hazards. The Ergonomics Program is applicable Dartmouth-wide, where ergonomic risk factors are possible for WMSDs.

Dartmouth College has a unique working population and a wide range of job activities. We have individuals in administration, food service, custodial service, trades, research, teaching, and transportation. Each of these settings has unique ergonomic challenges that must be addressed individually.

Section 3 - Definitions

Awkward Body Posture: Sustained holding of a bent position of the neck, back, hands/wrists, arms raised above shoulder level, or arms extended out in front of the body.

Contact Stress: Pressure on soft tissues of the body, such as the soft part of the palm, wrist, or the sides of fingers by tools and sharp edges.

Ergonomics: The science of fitting workplace conditions and job demands to the capabilities of the working population.

Extreme Temperatures: Cold air temperatures (55°F and lower) may cause loss of dexterity proportional to exposure time.

Force: Physical exertion or pressure applied to any body part while working, such as lifting, pushing, pulling, gripping, or pinching equipment or tools.

Individual Susceptibility: Individuals may be predisposed to musculoskeletal disorders based on their heredity, prior injuries, other illnesses, medication, smoking, etc.

Musculoskeletal Disorders (MSDs): Disorders of the muscles, nerves, tendons, ligaments, joints, cartilage, or spinal discs that are not the result of any instantaneous or acute event but reflect a more gradual or chronic development.

National Occupational Safety and Health (NIOSH): United States federal agency responsible for conducting research and making recommendations for the prevention of work-related injury and illness.

Neutral Body Positioning: A comfortable working posture with naturally aligned joints. Working with the body in a neutral position reduces stress and strain on the muscles, tendons, and skeletal system and reduces your risk of developing a musculoskeletal disorder.

Occupational Health and Safety Administration (OSHA): United States federal agency responsible for ensuring a safe and healthful working environment for workers by setting and enforcing standards and providing training, outreach, education, and assistance.

Repetition: Performing the same motion over and over again.

Work-related musculoskeletal disorders (WMSDs): MSDs that can be attributed to the work environment and the performance of work or MSDs that are made worse or longer lasting by work conditions.

Workstation: Any work area where personnel work or may work during normal workday activities.

Section 4 - Roles and Responsibilities

The success of the Ergonomics Program relies on and charges Dartmouth employees to adhere to, follow, and provide full support for this Program.

4.1 Environmental Health and Safety (EHS)

- Develop and maintain a written Ergonomics Program.
- Annually review and audit the Program elements and revise as needed.
- Assist supervisors in the interpretation and implementation of the Program.
- Collaborate with relevant stakeholders to create action plans addressing identified ergonomic risk factors.
- EHS Occupational Health performs ergonomic assessment upon request.

4.2 Supervisors

- Implement the program at the facility or department level.
- Encourage employees to complete an ergonomic self-assessment.
- Consider ergonomic issues and remediation strategy during the annual budget process.
- Report injuries and ergonomic issues.
- Seek technical support from EHS whenever necessary.

4.3 Employees

- Complete an ergonomic self-assessment.
- Request an on-site ergonomic assessment, if necessary.
- Complete online ergonomic training as needed.
- Report injuries and ergonomic issues.
- Seek technical support from EHS whenever necessary.

Section 5 - Hazards Associated with Ergonomics

Ergonomic hazards are factors in your environment that can cause musculoskeletal disorders (MSDs), which affect the muscles, nerves, blood vessels, ligaments, and tendons. MSDs are caused by strain placed on the body from ergonomic hazards that aren't always immediately obvious, making these hazards challenging to detect. Personnel in many different departments and occupations can be exposed to risk factors such as lifting heavy items, bending, reaching overhead, pushing and pulling heavy loads, working in awkward body postures, performing the same or similar tasks repetitively, sitting for prolonged periods of time, and computer use. Examples of common MSDs include carpal tunnel syndrome, epicondylitis, lower back injuries, muscle strains, rotator cuff injuries, tendinitis, and trigger finger.

Section 6 - Engineering Controls

Engineering controls are design plans or changes to the working environment to prevent or reduce personnel exposure to potential ergonomic hazards. The following example of engineering controls should be considered in area design to reduce the risk of ergonomic hazards.

- Design and installation of workstations that allow personnel to work in neutral positions.
- Purchase workstations that allow adjustment for different personnel.
- Provide personnel with the correct tools to perform tasks without body strain.
- Use of devices to assist in lifting and moving heavy objects.

Section 7 - Administrative Controls

Administrative controls are safe work practices and procedures designed to reduce the risks associated with ergonomics. Examples of administrative controls include the following:

- Perform routine inspections of workstations to identify ergonomic risks.
- Provide personnel with adequate breaks or work rotation while performing repetitive tasks.
- Provide proper maintenance of tools and equipment.
- Train personnel to identify ergonomic risks and mitigate them in the workplace.

Section 8 - Procedures

Dartmouth College personnel should always work to identify ergonomic hazards and then determine the proper techniques to minimize the hazard to accomplish a task. Potential injuries and disorders may be reduced, prevented, or eliminated through education and training or by designing and arranging work environments that allow individuals to function effectively. Contact EHS for assistance in evaluating the work area, and EHS can provide recommendations for improvement.

The most common risk factors that universally contribute to MSDs that Dartmouth College personnel should work to identify and mitigate in the workplace are as follows: awkward body posture, contact stress, extreme temperatures, force, individual susceptibility, and repetition.

Section 9 - Employee Training

Office ergonomic assessments are an essential part of understanding potential risk factors. The process of training includes:

1. Online training.
2. Employee conducts a self-assessment based on the topics learned during the online training.
3. EHS on-site training and assessment can be requested if the self-assessment is inadequate or the employee has specific issues they want to discuss.

Employees should receive training specific to their job duties. This training can be delivered online and/or in person.

- Administration: Computer use, material handling, and telephone use.
- Food Service: Cleaning, cooking, food preparation, and material handling.
- Custodial Services: Cleaning, extreme weather conditions, and material handling.
- Trades: Extreme weather conditions, material handling, hand and power tool use, vehicle use, and working in awkward positions and/or locations.
- Transportation: Computer use and vehicle use.
- Research: Computer use and material handling.
- Teaching: Computer use.

Section 10 - Program Evaluation

The Ergonomics Program shall be evaluated annually utilizing the protocols set forth by EHS. The evaluation will consist of a Program review, training review, and record-keeping. *Appendix A* – Pathway to Controlling WMSDs – will be utilized during the evaluation.

Section 11 - References

Center for Disease Control (CDC): About Ergonomics and Work-Related Musculoskeletal Disorders | Ergonomics and Musculoskeletal Disorders | CDC

NIOSH: “Elements of Ergonomics Programs: A Primer Based on Workplace Evaluations of Musculoskeletal Disorders”. A Primer Based on Workplace Evaluations of Musculoskeletal Disorders | NIOSH | CDC

University of Alaska Anchorage: Ergonomic and Back Safety Program

Appendix A: The Pathway to Controlling WMSDs

The Pathway to Controlling WMSDs from “Elements of Ergonomics Programs: A Primer Based on Workplace Evaluations of Musculoskeletal Disorders”:

1. Look for signs of a potential musculoskeletal problem in the workplace, such as frequent worker reports of aches and pains or job tasks that require repetitive, forceful exertions.
2. Show management commitment to addressing potential problems and encouraging worker involvement in problem-solving activities.
3. Offer training to expand management and worker ability to evaluate potential musculoskeletal problems.
4. Gather data to identify jobs or work conditions that are most problematic, using sources such as injury and illness logs, medical records, and job analyses.
5. Identify effective controls for tasks that pose a risk of musculoskeletal injury and evaluate these approaches once they have been instituted to see if they have reduced or eliminated the problem.
6. Establish health care management to emphasize the importance of early detection and treatment of musculoskeletal disorders for preventing impairment and disability.
7. Minimize risk factors for musculoskeletal disorders when planning new work processes and operations. Building practical designs in the workplace is less costly than redesigning or retrofitting later.