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Occupational Health Programs Manual - Chapter 15

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Change Record

Revision	Effective Date	Expiration Date	GRC25, Change Request #	Description
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Change 1	4/14/2014	4/17/2017	N/A	Administrative change to add front cover and change history log to comply with NPR 1400.1, added "The GRC shall follow the requirements of NPR 1800.1C" in Section 4.0 Policy.
Change 2	9/30/2015	4/17/2017	N/A	Administrative change to remove hyperlinks.

***Include all information for each revision. Do not remove old revision data. Add new rows to table when space runs out by pressing the tab key in the last row, far right column.*

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Chapter 15—ERGONOMICS

NOTE: The current version of this chapter is maintained and approved by the Safety and Health Division (SHeD). The last revision date of this chapter was June 2012. The current version is located on the Glenn Research Center intranet within the BMS Library. Approved by Chief of Safety and Health Division.

1.0 PURPOSE

This chapter establishes the NASA GRC Ergonomics Program. The program emphasizes making efforts at the design stage of work processes to avoid risk factors that can lead to musculoskeletal disorders (MSD).

2.0 APPLICABILITY

This chapter applies to all personnel at NASA GRC and Plum Brook Station (PBS) and includes but is not limited to civil servants, contractors, tenants, and students.

3.0 BACKGROUND

Work-related MSD are among the most prevalent lost-time injuries and illnesses in nearly every industry. Those involving the back are among the most costly occupational health problems. Causes span diverse workplaces and job operations. The six key program elements that help to eliminate ergonomic injuries follow:

- Management leadership and employee involvement
- Ergonomic hazard identification and information programs
- Job hazard analysis and control
- Training programs
- Medical management of emerging injuries
- Program evaluation

The National Institute for Occupational Safety and Health (NIOSH), the Federal agency responsible for conducting research and making recommendations for the prevention of work-related disease and injury, is part of the Centers for Disease Control and Prevention (CDC).

NIOSH has developed the Work Practices Guide for manual lifting. Employees can use the guidelines to determine which risk factor cause problems and then can use a formula to find the recommended weight limit (RWL) for lifting so as to avoid injury.

Lifting tasks are a primary contributor to work-related MSD. Some of the many potential risk factors associated with lifts include excessive force, awkward postures, repetitiveness, and static loading.

4.0 POLICY

It is the policy of GRC to manage and conduct research and development operations in a manner that eliminates or minimizes all potential hazards and to avoid accidents involving injury to personnel, damage to property, or loss of research operation time and effectiveness. The ergonomics policy is designed to minimize work-related MSD by developing a proactive Ergonomics Program. GRC will provide the proper equipment, facilities, safety rules, and procedures necessary for implementing this program. The GRC shall follow the requirements of NPR 1800.1C.

5.0 RESPONSIBILITIES

It is the responsibility of all civil servants, tenants, and support service contractors to use the equipment and facilities in a manner that will contribute to the effectiveness of the Ergonomics Program.

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5.1 **Safety and Health Division (SHeD)**

- Shall provide guidance on the requirements of Federal, State, and local ergonomic regulations as well as standard ergonomic guidelines
- Shall maintain the Ergonomics Program
- Shall be responsible for all original Ergonomic Pre-assessment Surveys and NASA form GRC19, Office Ergonomics Evaluation Checklist

5.2 **Program Lead**

- Shall provide guidance on the requirements of Federal, State, and local regulations and standard ergonomic guidelines
- Shall manage the Ergonomics Program

5.3 **Ergonomics Assessment Team**

- Shall be composed of members of SHeD
- Shall be familiar with Ergonomics Program requirements
- Shall utilize the program as it relates to the needs of employees
- Shall comply with requirements and ensure that employees comply
- Shall be trained to recognize, evaluate, and control ergonomic hazards that may be present at GRC and be trained in a recognized occupational ergonomics course or equivalent
- Shall perform assessments of employee workareas, based on requests
 - Shall identify ergonomic problems and concerns and notify the program lead for assistance with correcting them
 - Shall submit to the direct supervisor an ergonomic survey report containing all ergonomic components of the employee's environment
 - Shall conduct interviews and take anthropometric and workstation measurements
 - Shall analyze the results of assessments to determine if negative ergonomic conditions exist and to what degree and shall use the analysis to determine how to eliminate or minimize problems

5.4 **Shall re-evaluate the ergonomic program periodically and identify deficiencies and correct. Ergonomic Assessment Staff (Resident Medical Services Contractor)**

- Shall be trained to recognize, evaluate, and control ergonomic hazards
- Shall perform assessments of employee workareas by request
- Shall conduct interviews and perform anthropometric and workstation measurements
- Shall analyze the results and determine how to eliminate or minimize problems

5.5 **Employees**

- Shall complete required ergonomic office training in SATERN
- Shall know the signs and symptoms of MSD and notify their supervisors
- Shall practice good posture and develop work habits that will reduce ergonomic injury
- Shall notify their supervisors of ergonomic concerns
- Shall serve on a safety and occupational health committee that makes recommendations to correct ergonomic hazards

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- Shall work with the Ergonomics Program to learn and use skills to identify and analyze jobs for ergonomic hazards and make recommendations to correct them
- Shall complete the ergonomics questionnaire PRIOR to formal evaluation

5.6 NASA Center directorate heads are responsible for ensuring that the NASA Occupational Health Program (OHP) be effectively implemented and operated at their respective Centers and component facilities

- Initiate the ergonomic assessment process.
- Contact Medical Services to request an ergonomic assessment of work area.
- Ensure that a Center survey is completed at a specific interval to collect data defining the strength of the ergonomic program.

6.0 REQUIREMENTS

6.1 Employee Office Ergonomic Training

- The following required office ergonomic training shall be completed by all employees who work in an office environment. Office Ergonomic Training (SATERN)
- *Training will be a one-time requirement, and thereafter, a refresher every 3 years.*

6.0 Verification the Human Capital Development Division (HCDD) assigns the course and tracks for completion in the System for Administration, Training and Educational Resources for NASA (SATERN). All on-line training

7.0 RECORDS

Ergonomic records are maintained by the Medical Service contractor (building 15, room 102) and consist of Ergonomic Pre-assessment Surveys and the Office Ergonomics Evaluation Checklist (NASA form C-19).

8.0 REFERENCES

Document number	Document name
NPD 1800.2B	NASA Occupational Health Program
NPD 1810.2B	NASA Occupational Medicine Program
NPR 1800.1	NASA Occupational Health Program Procedures
NIOSH – 1981	National Institute for Occupational Safety and Health

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APPENDIX A.—DEFINITIONS AND ACRONYMS

Anthropometry.—The study of physical dimensions in people, including the measurement of human body characteristics, such as size, breadth, girth, and distance between anatomical points. Anthropometry also includes segment masses, the centers of gravity of body segments, and the ranges of joint motion, which are used in biomechanical analyses of work postures.

Centers for Disease Control and Prevention (CDC)

Ergonomics.—Ergonomics is an engineering discipline that addresses the effect work environments and tasks have on the worker. Ergonomics involves workstation setup and design, body posture, prevention of computer-related injuries, and more. Ergonomics education is often included in the physical therapy treatment for back and neck injury and for chronic pain management. It is also known as human factors and human factors engineering.

Human Capital Development Division (HCDD)

Lower back pain.—LBP

Musculoskeletal disorders (MSD).—Ergonomic injuries are often described by the term “musculoskeletal disorders,” a term in scientific literature that refers to a group of injuries and illnesses that affect the musculoskeletal system. There is no single diagnosis for MSD. The determination of whether any particular MSD is work-related may require the use of different approaches tailored to specific workplace conditions and exposures. Broadly speaking, establishing the work relatedness of a specific case may include taking a careful history of the patient and the illness; conducting a thorough medical examination; and characterizing factors on and off the job that may have caused or contributed to the MSD.

National Institute for Occupational Safety and Health (NIOSH)

NASA Policy Directive (NPD)

Recommended weight limit (RWL).—The principal product of the revised NIOSH lifting equation. The RWL is defined for a specific set of task conditions as the weight of the load that nearly all healthy workers could perform over a substantial period of time (e.g., up to 8 hours) without an increased risk of developing lifting-related LBP. By healthy workers, we mean workers who are free of adverse health conditions that would increase their risk of musculoskeletal injury.

Static loading.—Static loading, or sustained exertions, are physical effort or body postures that are held and require muscle contraction for more than a short time. As muscles remain contracted, the blood flow to the muscles is reduced.

System for Administration Training, and Educational Resources for NASA (SATERN)

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