



Training Solutions, Delivered!

UNDERSTANDING & CONTROLLING ERGONOMIC RISK FACTORS *(Concise)*

**Leader's Guide, Fact Sheet
& Quiz**

Item Number: 4732
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This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation.

PREPARING FOR THE MEETING

Here are a few suggestions for using this program:

- a) Review the contents of the Fact Sheet that immediately follows this page to familiarize yourself with the program topic and the training points discussed in the program. The Fact Sheet also includes a list of Program Objectives that details the information that participants should learn from watching the program.
- b) If required by your organization, make an attendance record to be signed by each participant to document the training to be conducted.
- c) Prepare the area and equipment to be used for the training. Make sure the watching environment is comfortable and free from outside distractions. Also, ensure that participants can see and hear the TV screen or computer monitor without obstructions.
- d) Make copies of the Review Quiz included at the end of this Leader's Guide to be completed by participants at the conclusion of the presentation. Be aware that the page containing the answers to the quiz comes before the quiz itself, which is on the final page.

CONDUCTING THE PRESENTATION

- a) Begin the meeting by welcoming the participants. Introduce yourself and give each person an opportunity to become acquainted if there are new people joining the training session.
- b) Introduce the program by its title and explain to participants what they are expected to learn as stated in the Program Objectives of the Fact Sheet.
- c) Play the program without interruption. Upon completion, lead discussions about your organization's specific policies regarding the subject matter. Make sure to note any unique hazards associated with the program's topic that participants may encounter while performing their job duties at your facility.
- d) Hand out copies of the review quiz to all of the participants and make sure each one completes it before concluding the training session.

4732 UNDERSTANDING & CONTROLLING ERGONOMIC RISK FACTORS (*Concise*) FACT SHEET

LENGTH: 10 MINUTES

PROGRAM SYNOPSIS:

Ergonomics can be complicated, but this program provides a simple explanation all employees can understand. Ergonomic controls are used in almost all workplaces to prevent musculoskeletal disorders (MSDs), often called cumulative trauma disorders or repetitive stress injuries. Workers often ignore the signs and symptoms of these disorders until a chronic condition has developed and they often don't know the measures they can take to prevent them. That's the purpose of this program—to explain what ergonomics and musculoskeletal disorders are and the measures your organization takes to control ergonomic risk factors. More importantly, the program reviews work control practices that workers can follow to prevent musculoskeletal injuries and illnesses. It also features both office and industrial settings to illustrate important lessons about ergonomics.

Topics include musculoskeletal disorders and their signs/symptoms, the ergonomics program, ergonomic controls and lifting and carrying loads.

PROGRAM OBJECTIVES:

After watching the program, the participant should be able to explain the following:

- How the company's ergonomic program and ergonomic controls work to help prevent MSDs;
- Which work practice controls to follow for various body parts;
- How to lift and carry loads properly to reduce the risk of MSDs.

PROGRAM OUTLINE

MUSCULOSKELETAL DISORDERS

- Ergonomic controls are used in almost all workplaces to prevent musculoskeletal disorders.
- Here are some signs and symptoms that you should be aware of: abnormal formation of the extremities, such as curled fingers or toes, restricted movement in the joints of your knees, elbows, wrists, neck or shoulders, difficulty in holding and lifting objects due to decreased grip strength, fingers or toes turning white, pain, numbness, tingling, burning or other sensations in various body parts and loss of muscle function or control, which can cause the affected area to feel heavy or clumsy.
- Ergonomic risk factors that can lead to musculoskeletal disorders include excessive repetition of body movements, awkward or unchanging postures, exerting too much force, vibration, contact stress and cold temperatures.

THE ERGONOMICS PROGRAM

- Organizations that have job tasks and work areas where these factors could adversely affect the health of employees have a plan for reducing, eliminating or controlling them. Most companies call this their Ergonomics Program.
- Controlling ergonomic hazards begins with identifying the jobs that have risk factors associated with them. As part of the ergonomics program, the company has conducted a series of job hazard analyses on all jobs, operations and work activities where ergonomic risk factors are present in order to pinpoint specific problems.

METHODS TO CONTROL ERGONOMIC RISK FACTORS

- After identifying the ergonomic risk factors of each job, an organization generally uses three forms of controls to protect employees performing these tasks: engineering controls, administrative controls and personal protective equipment.

Engineering Controls

- Engineering controls are the most preferred and reliable approach for reducing the risk of ergonomic-related illnesses and injuries. These controls focus on modifying job tasks, workstations, tools and processes, taking into account the physical capabilities and limitations of workers.

- An example of engineering controls is improving employee workstations by adding height-adjustable workbenches or providing ergonomic-friendly office equipment that a worker can adjust to maintain a neutral posture and avoid awkward positions.
- Another example is supplying workers with mechanical lifting devices for transporting heavy objects to avoid strain and force exertion from manual lifting.

Administrative Controls

- Administrative controls are policies and practices introduced by management to reduce ergonomic risk factors, such as exertion, repetitive motion and awkward postures. While administrative controls do not eliminate workplace hazards, they can be effective when engineering controls aren't feasible.
- Examples include scheduling more breaks for strenuous jobs, rotating job tasks to reduce exertion and repetition and establishing more efficient job procedures.
- Another administrative control is training to help workers recognize ergonomic risk factors and learn the safe work practices that they can follow to prevent the development of MSDs.

Personal Protective Equipment

- Personal protective equipment, PPE, is another control that is provided to workers by the employer in an effort to reduce the risk of ergonomic problems. It is not designed to take the place of engineering or administrative controls, but rather serve as a barrier between the worker and hazard source.
- Examples of ergonomic PPE are gloves that reduce vibration from tools and equipment, thermal gloves that allow materials to be handled easily in cold conditions and kneepads or padding that reduces direct contact with hard, sharp or vibrating surfaces.

WORK PRACTICE CONTROLS: Hands, Wrists & Fingers

- Whether you work in an office environment or in an industrial setting, the essential elements in preventing MSDs are posture and body positioning.
- Maintaining neutral posture while working is crucial in reducing stress on body parts, especially when performing job tasks that are done repeatedly throughout your shift.
- To prevent carpal tunnel syndrome and other disorders of hands, wrists and fingers, it is important to keep your wrists in the neutral position whenever possible. Neutral posture for the wrist is 10 to 15 percent extension in any direction with the thumb to the side while typing or with the thumb up while using tools.
- Working with your wrist in any other position other than neutral puts stress on the tendons and ligaments and can lead to chronic problems. So never work with your wrist flexed up or down or shifted to the left or right.

WORK PRACTICE CONTROLS: Arms & Shoulders

- Awkward positions of your arms can also lead to MSDs.
- To maintain a neutral position for your arms, keep your upper arms to the side and your wrists and forearms out at 90-degree angles. Avoid having to raise your arms directly forward or reaching backwards.
- One common mistake workers make is to overreach by extending an arm out fully with the elbow locked. This puts tremendous stress on the wrist, arm, elbow and shoulder and should be avoided at all costs.
- A common solution to this problem is to tailor your workstation to your physical dimensions so that tools and supplies are easily within reach.
- Of course, many work surfaces are stationary and cannot be lowered or raised. When this is the case, you may have to raise or lower your chair to the proper height to maintain a neutral position.

WORK PRACTICE CONTROLS: The Neck & Back

- Adjusting the workstation to fit your body will also help keep your back and neck in neutral positions.
- To maintain neutral posture for your back, sit up straight so that your spine's natural shape and lumbar curve are supported by the backrest of the chair. Lumbar support pillows are available for chairs that don't offer enough support for the lumbar region.
- Adjust the height of your chair so that your feet rest flat on the floor and your knees are slightly more elevated than your hips. This alleviates the strain on your lower back.

- If your feet don't reach the floor, choose a footrest to support them that allows you to maintain neutral posture while sitting.
- Neutral posture for your head and neck is having them centered over your shoulders so you can look forward. To achieve this, you may have to adjust your workstation so that you can hold your head straight while the primary focus of your work is in front of you close to eye level.
- Awkward positions such as bending your neck forward or backward for long periods of time to see the work can strain both your neck and back.
- Standing for long periods of time is both stressful and fatiguing to your back and the rest of your body. If you must stand for extended periods, use anti-fatigue mats to absorb the stress of standing on a hard surface.
- Using a footrest and switching your feet periodically will make standing work much more comfortable while relieving the stress on the discs of your back.

ERGONOMICS OF LIFTING & CARRYING LOADS

- Lifting and carrying objects improperly can cause a multitude of problems that often lead to musculoskeletal disorders. It is imperative that you use proper lifting procedures to avoid back, shoulder and neck injuries.
- When lifting a load, use a staggered stance with one foot in front of the other, bend your knees and get as close to the load as possible. Get a good grip on the load and lift by using your legs to rise up. Lift smoothly without jerking and maintain the natural lumbar curve in your spine.
- Avoid lifting up the load with a twisting or side bend motion. Twisting your back with a raised load can be extremely damaging to your spine. Instead, move your feet in the direction in which you need to travel.
- Carry a load close to your body, using two hands to distribute the weight evenly. To set an object down, reverse the lifting process. Keep your back in a neutral posture and bend at the knees.
- If the load is too heavy or awkward to lift alone, don't risk injuring your back. Get help or use a mechanical lifting device such as a hand truck or dolly.

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ANSWERS TO THE REVIEW QUIZ

1. a

2. a

3. b

4. a

5. a

6. c

7. b

8. a

9. b

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REVIEW QUIZ

The following questions are provided to determine how well you understand the information presented in this program.

Name _____ Date _____

1. An ergonomics program is a plan for reducing, eliminating or controlling ergonomic risk factors.
 - a. True
 - b. False

2. Which is the most preferred and reliable approach for reducing the risk of ergonomic related illnesses and injuries?
 - a. Engineering controls
 - b. Administrative controls
 - c. Personal protective equipment

3. Administrative controls can be introduced to eliminate workplace hazards.
 - a. True
 - b. False

4. Personal protective equipment is not designed to take the place of engineering or administrative controls.
 - a. True
 - b. False

5. Neutral posture for the wrist is _____ extension in any direction.
 - a. 10 to 15 percent
 - b. 20 to 25 percent
 - c. 30 to 35 percent

6. To maintain a neutral position for your arms, keep your upper arms to the side and your wrists and forearms out at _____ angles.
 - a. 45-degree
 - b. 60-degree
 - c. 90-degree

7. When adjusting the height of your chair, your hips should be slightly more elevated than your knees.
 - a. True
 - b. False

8. Neutral posture for your head and neck is having them centered over your shoulders so you can look forward.
 - a. True
 - b. False

9. When carrying a load, the load should be held away from your body.
 - a. True
 - b. False