



## ***ABOUT ERGONOMICS***

**LENGTH: 13 MINUTES**

### **PROGRAM SYNOPSIS:**

Our workplace is full of hazards, hazards that can hurt us or kill us. Controlling these hazards and preventing injuries is the point of our safety and health program. One such hazard is the risk of developing a musculoskeletal disorder when parts of our body are subjected to awkward positions. Using proper work practice controls in both office and industrial settings can prevent these types of injuries. That is the point of our facility's Ergonomics Program and that is the point of this program. So, pay close attention as we get to the point about ergonomics.

Topics include three ergonomic control measures, personal protective equipment, work practice controls for various body parts, how to lift and carry loads properly and how and why to report symptoms of MSDs.

### **PROGRAM OBJECTIVES:**

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

- Which work practice controls to follow for various body parts;
- How to lift and carry loads properly to reduce the risk of MSDs;
- How and why to report symptoms of MSDs;

### **THE ERGONOMICS PROGRAM**

- Our organization has established an Ergonomics Program that is designed to reduce, control or eliminate ergonomic risk factors that can cause injuries and ailments.
- For our Ergonomics Program to be effective, employees must understand their role in preventing musculoskeletal disorders and take action when they become aware of any ergonomic problems.
- As part of our Ergonomics Program, the company has conducted a job hazard analysis on all job tasks where ergonomic risk factors are present in order to identify any specific issues that could lead to musculoskeletal disorders.

### **MUSCULOSKELETAL DISORDERS**

- For you to better understand the methods and techniques used to control ergonomic risk factors, you need to know what musculoskeletal disorders are, their causes and their signs and symptoms.
- Sometimes called cumulative stress disorders or repetitive stress injuries, MSDs adversely affect the muscles, tendons, ligaments, joints and cartilage of various parts of the body.
- Signs and symptoms of these disorders include restricted movement in the joints of your elbows, knees, wrists, neck or shoulders, burning, pain, numbness, tingling or other sensations in various body parts, loss of muscle control, curled fingers or toes and decreased grip strength that makes it difficult to lift and hold objects.
- Common ergonomic risk factors that can increase the risk of developing a musculoskeletal disorder include awkward or static postures, excessive repetition of body movements, contact stress, cold temperatures and vibration.

### **ENGINEERING CONTROLS**

- Our organization utilizes three types of control measures to reduce, control or eliminate ergonomic risk factors. The first type of control measure is engineering controls.
- When possible, engineering controls are used to physically change the immediate work area, such as adjusting workstations or improving tools and processes to eliminate or reduce ergonomic hazards.
- This can include redesigning tools to enable neutral operating postures, repositioning work tables that require excessive reach and providing lift assist devices to limit exertion.
- Other examples of engineering controls include supplying office workers with ergonomically friendly chairs and equipment and upgrading industrial workstations to have adjustable height.

### **ADMINISTRATIVE CONTROLS**

- Engineering controls are just one method for reducing or eliminating ergonomic risk factors, our organization also uses administrative controls to reduce and control hazards.
- Examples of administrative controls include rotating job tasks to allow employees to use different muscles and change work posture throughout the day. Placing weight limits for lifting and adhering to a fixed schedule of rest breaks are also examples of administrative controls.

## PERSONAL PROTECTIVE EQUIPMENT

- A third control method, personal protective equipment, can also be used. In some instances, PPE will be provided to workers to reduce the risk of ergonomic injuries and ailments.
- Examples of utilizing protective equipment to control risk factors include good-fitting thermal gloves that help workers handle materials in cold weather, gloves that lessen the effects of vibrating tools and equipment and knee pads and other padding that reduces direct contact with hard, sharp or vibrating surfaces.

## WORK PRACTICE CONTROLS

### *Hands & Wrists*

- Finally, there is a fourth type of control which depends on the responsibility of the employee to be effective. Known as work practice controls, these control methods require the worker to utilize proper body positioning and a neutral posture to help prevent ergonomic related ailments.
- Whether you work in an office environment or an industrial setting, it is crucial that you keep your wrists in a neutral position while working.
- Neutral position for the wrist is centered up to 15 degrees off center in any direction.
- For the common task of keyboarding, your thumbs should be to the side while maintaining a neutral wrist position.
- While using tools, your thumb should be extended upwards while maintaining a neutral wrist position.
- Working with your wrists in awkward positions beyond neutral can place stress on the tendons and ligaments. When repeated over time, working with your wrists shifted to the left or right or flexed up or down can cause injury and MSDs.
- If you find yourself using these types of awkward positions to reach your work, make a change to your work area, such as using a step stool, or consult your supervisor for assistance.
- Vibration is another risk factor that affects the hands and wrists as well as many other body parts.
- When possible, avoid using tools that vibrate excessively. If you must use vibrating tools, make it a point to wear anti-vibration gloves and take breaks periodically.

## WORK PRACTICE CONTROLS

### *Arms & Shoulders*

- Neutral posture is also important to prevent strains on your arms and shoulders.
- Maintaining a neutral posture for your arms starts with keeping your arms to the side and your wrists and forearms out at 90-degree angles.
- You should avoid frequently raising and extending your arms directly forward and you should also avoid frequently reaching backward.
- These damaging postures can be avoided by modifying your work area to better fit physical attributes. For example, the height of work surfaces, chairs and stools can be adjusted to keep your arms in a neutral posture.
- Also, make it a point to position frequently used equipment, tools and supplies within easy reach and at a proper height.

## WORK PRACTICE CONTROLS

### *Back & Neck*

- We are all probably familiar with back and neck pain from poor posture. To prevent this, your back and neck should also be kept in a neutral position.
- Neutral posture for your back can be maintained by sitting up straight so that your spine's lumbar curve is supported by the chair's backrest.
- Additional support pillows can be used if your chair doesn't provide enough support for your lumbar region.
- To alleviate stress on your lower back, your chair should be adjusted so that your feet rest flat on the floor and your knees are slightly elevated and bent to a 90-degree angle.
- In some instances, a footrest is needed to achieve this posture.
- Standing for long periods can also cause strain and fatigue to your back. While standing, maintain good posture with your head up and your shoulders back.
- The use of anti-fatigue mats can help reduce the stress caused by standing on a hard floor.
- Using a footrest and switching your feet periodically while standing can also provide comfort and relieve strain on your spine.
- Your neck is also subject to strain from poor posture. Avoid keeping your neck bent forward or backward for extended periods.
- Keep your head centered over your shoulders with your eyes looking forward.
- The main focus of your work should be in front of you at eye level.
- If this is not the case, adjust your work area to avoid neck and back strain.

## LIFTING & CARRYING LOADS

- Some of the most common ergonomic injuries involve the back. Your back is vulnerable to injury anytime you lift or carry objects improperly. Making it a point to follow proper work practice controls for lifting and carrying will help prevent back injuries.
- To lift a load properly, get as close to the load as possible and then take a wide stance and bend your knees to lower your body. Get a good grip on the object and use the strength of your legs to rise up while keeping your head up and shoulders back.
- Do not bend at the waist when lifting any load, no matter how small.
- Also, avoid any jerking, twisting or side-bending motions while lifting or placing the load.
- In order to turn with the load without twisting, reposition your feet in the direction you wish to turn while maintaining the load close to your body.
- Reverse the lifting process when setting down the load. Keep your head up and shoulders back and do not bend at the waist. Take a wide stance and lower the load by bending your knees.
- Don't risk a back injury if a load is too bulky or heavy to lift alone. Get help or use a hand truck, cart, dolly or other mechanical lifting device.

## **REPORTING SYMPTOMS OF MUSCULOSKELETAL DISORDERS**

- If you do suffer a musculoskeletal disorder, it is important to report it so proper treatment can begin and additional preventive measures can be put into place.
- Signs and symptoms of MSDs include restricted movement in joints such as elbows, knees or wrists. Also pain, numbness and a loss of muscle control or strength are indicators of a potential musculoskeletal disorder.
- Report any symptoms right away. Musculoskeletal disorders often occur cumulatively over time. Early reporting can prevent a worsening of the condition.
- When reporting symptoms, be prepared to give specific information, including when and where the symptoms first appeared, what they felt like and if you were performing a specific task when you first noticed the symptoms.

## TO THE POINT ABOUT ERGONOMICS

### *Review Quiz*

Name \_\_\_\_\_ Date \_\_\_\_\_

*Please provide answers to the following to show how well you understand the information presented during this program.*

1. Ergonomic risk factors that can increase the risk of developing a musculoskeletal disorder include \_\_\_\_\_.
  - a. Awkward postures
  - b. Excessive repetition
  - c. Vibration
  - d. All of the above
  
2. \_\_\_\_\_ controls are used to physically change the immediate work area.
  - a. Administrative
  - b. Engineering
  - c. Work practice
  
3. Personal protective equipment is NOT considered an ergonomic control measure.
  - a. True
  - b. False
  
4. Neutral position for the wrist is centered up to \_\_\_\_ degrees off center in any direction.
  - a. 15
  - b. 20
  - c. 25
  
5. While using tools, your thumb should be extended upwards while maintaining a neutral wrist position.
  - a. True
  - b. False
  
6. To maintain neutral posture for your arms, keep your arms to the side and your wrists and forearms out at \_\_\_\_\_ degree angles.
  - a. 45
  - b. 60
  - c. 90
  
7. To alleviate stress on your back, your chair should be adjusted so that your feet rest flat on the floor.
  - a. True
  - b. False
  
8. You should only bend at the waist when lifting a load when you are sure it is light and easy to lift.
  - a. True
  - b. False
  
9. Signs and symptoms of musculoskeletal disorders should be reported right away.
  - a. True
  - b. False

*ANSWERS TO THE REVIEW QUESTIONS*

1. d

2. b

3. b

4. a

5. a

6. c

7. a

8. b

9. a