

Moving, Lifting and Repetitive Motion

Lesson 1: Objectives

Upon completion of this course, you will be able to:

- ❖ Define manual handling and body mechanics;
- ❖ Identify safe moving and lifting practices;
- ❖ Describe repetitive motion tasks;
- ❖ List injury prevention activities; and
- ❖ Appropriately report injuries.

Introduction

Every employee within your organization performs tasks that involve lifting, lowering, pushing, pulling, carrying, moving or holding an object. When a person uses force to perform these tasks it is called manual handling. Manual handling includes carrying boxes of paper, moving equipment, and lifting patients/residents. Some employees perform tasks that require repetitive motion such as typing, working with small instruments, moping and painting. Employees should perform these tasks safely.

Body mechanics is the use of one's body to produce motion that is safe. Proper body mechanics can reduce stress and strain on your body therefore reducing the possibility of injury. Improper body mechanics such as bending at the waist to lift an object, twisting or reaching while lifting, and lifting from an awkward position increase your risk of injury. Proper arrangement of activities and workspace in accordance with ergonomic guidelines can also help prevent injuries that can result from repetitive motion.

Lesson 2: Safe Lifting and Moving Guidelines

Employees can be affected by improper lifting and moving. Staff is at risk for strains, sprains, and long-term disabilities (such as chronic back pain) that can result in missing work, decreased income and increased medical expenses.

The following guidelines are provided to assist you with lifting and moving. You should never lift or move anything unless you can do so safely. Be aware of your abilities and limitations.

Plan the Lift

- ❖ Determine the weight and balance of the object. If you do not know the weight, test it by lifting it a little bit and setting it down again. The heavier the object, the greater the risk for injury.

- ❖ Evaluate the area from which you are moving the object. Is there adequate space for lifting using proper body mechanics?
- ❖ Evaluate the need for mechanical aid (such as a dolly), an assistive device (such as a sliding board), or a team lift. If equipment is needed, lift and move the object by following the manufacturer's guidelines.
- ❖ Evaluate the area to which you are moving the object. Remove any obstacles or tripping hazards from your path. If the object is to be moved a long distance, plan areas to rest.
- ❖ Determine the need for personal protective equipment.

Lifting Technique

- ❖ Face the object. Place your feet shoulder width apart, with one leg slightly forward of the other. Wear sturdy non-skid shoes. Stand close to the object. If the object is not close, try sliding it towards you before attempting to lift it. The stress on your lower back greatly decreases when objects are held close to the body and when a long reach is not needed. Bend at your knees – not at your waist. Do not let your knees go over top of your toes. Keep your back bowed in and your shoulders level and facing the same direction as your hips. Grip the object with your palms, not just your fingers. Use handles if available. Keep your arms close to your body to help support the object. For objects that are awkward in size or shape, you may need to grip at opposite corners.

Lifting Maneuver

- ❖ Keep your buttocks back and head and chest up. Tighten your stomach muscles. Using your leg muscles, not your back, lift the object smoothly. If the object is too heavy and you have to stop, slowly lower it and get help.
- ❖ If a team is used to lift an object, chose one person to call out directions. Perform all maneuvers smoothly and in unison.

Moving the Object

- ❖ When carrying an object, keep it as close to your body as possible by grasping the bottom corners furthest from your body. Keep the heaviest side of the object closest. When turning, avoid twisting your body, instead, turn with your feet.
- ❖ Whenever possible push don't pull an object. Place the object on a rolling device or have wheels attached, if possible, to allow for easier movement. Keep wheels in good condition to reduce the amount of force used with these objects. Place the handles at waist or chest level. Stay close, keep

your arms close to your body and use your body weight to move the object. Let the movement of the object do some of the work for you. Get help with heavy or bulky objects, or objects in which you cannot see over.

- ❖ Don't move several objects at one time by yourself.

Lowering the Object

- ❖ Put the object down by bending at the knees and bowing in your lower back. Keep your feet apart, if possible. Set down a corner of the object and slide your hand out from under it. Settle the rest of the object.

Quiz Question:

Place the following tasks in the appropriate order when lifting and moving.

- 1. Determine the weight and balance of the object. Evaluate the area from which you are moving the object. Evaluate the need for mechanical aid, an assistive device, a team lift, or personal protective equipment. Evaluate the area to which you are moving the object.**
- 2. Place your feet shoulder width apart, with one leg slightly forward of the other. Stand close to the object, bend at your knees, and grip the object with your palms.**
- 3. Keep your buttocks back and head and chest up. Tighten your stomach muscles. Using your leg muscles, lift the object smoothly.**
- 4. Keep the object as close to your body as possible by grasping the bottom corners furthest from your body.**
- 5. Put the object down by bending at the knees and bowing in your lower back. Set down a corner of the object and slide your hand out from under it. Settle the rest of the object.**

Lesson 3: Patient/Resident Lifting and Moving

Many of the guidelines previously provided for the safe lifting and moving of objects also apply to the safe lifting and moving of patients/residents. In this lesson the term patient will be used to refer to both patients/residents.

- ❖ When planning a lift, evaluate the patient and review his or her medical record or treatment plan, if you are authorized. Determine the patient's weight, degree of assistance needed, and other important information. Prepare the patient for the lift or move by explaining the task, giving instructions and allowing time for questions.

Common patient lifting and moving maneuvers:

To help a lying patient to a sitting position: Place the patient on his or her side, facing you. Raise the head of the bed. Place one of your arms under the patient's shoulder and your other arm over the patient's thighs. At the same time, lift the patient's upper body and move his or her legs over the edge of the bed, placing the patient in a sitting position.

To transfer a sitting patient: Position equipment such as a wheelchair. Place the patient's feet flat on the floor. Face the patient. Bend your knees and align them with the patient's knees. Hold the patient by a transfer belt or use an approved hold. Using proper body mechanics lift the patient to a standing position. If the patient is too heavy and you have to stop, slowly lower the patient and get help. Encourage the patient to support his or her weight as much as possible. Turn by moving your feet, helping the patient to do the same. Gently help lower him or her into a sitting position.

To move a patient up in bed: This maneuver requires at least one other person. Stand on opposite sides of the bed. Make sure the turn sheet extends from the patient's shoulders to their thighs. Instruct the patient to cross his or her arms over their chest and bend their knees. Grasp the sheet at the patient's shoulders and buttocks and pull it tight. Gently lift and move the patient up in the bed. Protect the patient's skin by not dragging them across the bed. Encourage the patient to help by using his or her legs to push.

Lesson 4: Mechanical Aids and Assistive Devices

The mechanical aids and assistive devices available within your organization have been selected based upon the specific needs of its patients/residents and employees. You must be properly trained on this equipment prior to use and should follow the manufacturer's guidelines. Your selection of equipment must be based upon the object's or patient's/resident's size and condition, and the type of lift and move.

Lesson 5: Additional Guidelines

As mentioned, you should never lift or move anything unless you can do so safely. Special consideration should be given regarding the following:

Gas cylinders

- ❖ When moving or lifting a gas cylinder use an appropriate carrier. Since gas cylinders are heavy and awkward, they require special care and equipment for moving, lifting and securing so that they don't fall or tip over and cause an injury. Do not lift the cylinder by its protective cap or guard or by using magnets, chains or slings because this may damage the valves.

Storage areas

- ❖ Store heavy objects on lower shelves and racks. Label extra heavy or unbalanced objects to alert other employees.
- ❖ A ladder or step stool should be used for any object that must be reached or placed on a rack higher than shoulder level. To remove the object, pull the object from the shelf using the strength of your legs and hand it to someone else before climbing down. To place the object, have someone hand it to you while you are on the ladder. Place a corner of the object on the rack or shelf and slide your fingers free. Settle the object securely on the rack or shelf.

Lesson 6: Repetitive Motion

Some workplace injuries are caused by repetitive motion required for the completion of job assignments. The stress and strain of constantly repeating an act with your hands can cause swelling of the tendons in the wrist, called Carpal Tunnel. Carpal Tunnel can cause tingling and numbness in the thumbs, index, and middle fingers and often results in loss of grip to the extent of not being able to hold the simplest items such as a cup or newspaper. The risk of Carpal Tunnel Syndrome is increased by forceful or repetitive hand or wrist movement or the use of vibrating equipment.

Lesson 7: Prevention of Injuries

Improper lifting and moving can result in injury. Injury can follow sudden trauma or repeated acts of improper lifting and moving. To eliminate or minimize injuries you need the correct amount of strength, flexibility, and overall quality of life. You need to exercise, eat right, use proper body mechanics and stretch as often as possible to help prevent injuries, and to recover more quickly if you are injured.

To prevent Carpal Tunnel Syndrome, you should arrange activities and workspace in accordance with ergonomic guidelines and use proper body mechanics to avoid the physical stress that contributes to this disabling condition. Evaluate the placement of your workstation, including the desk, computer keyboard, mouse pad, and screen, and the height and support of your chair. Proper placement can decrease the complications of Carpal Tunnel and relieve neck and back strain. Take breaks, reposition, alternate activities, and stretch as often as possible.

Lesson 8: Reporting

(NOTE: You may wish to display contact information for the appropriate personnel)

It is important to report injuries to the appropriate personnel within your organization. These individuals are responsible for recording and appropriately reporting these injuries. With proper reporting and recordkeeping, injury patterns can be studied and valuable information about their causes and prevention measures can be identified.

Lesson 9: Conclusion

(NOTE: You may wish to display contact information for the appropriate personnel to contact within your organization.)

Your organization is committed to providing a safe and healthy environment for their employees and patients/residents. If you have any questions about body mechanics, injuries, or reporting of these incidents, contact the appropriate personnel within your organization.

Test Questions (10 questions Pre-test or 5 questions Post-test)

Pool 1 (6 or 3 questions)

MULTIPLE CHOICE

1. Improper body mechanics include:
 - a. Bending at the waist to lift an object.
 - b. Twisting or reaching while lifting.
 - c. Lifting from an awkward position.
 - d. All of the above.

2. Improper lifting and moving can result in:
 - a. Strains.
 - b. Sprains.
 - c. Long-term disabilities.
 - d. All of the above.

3. In planning for a lift or move, you must:
 - a. Evaluate the area from which you are moving the object.
 - b. Evaluate the area to which you are moving the object.
 - c. Determine the weight and balance of the object.
 - d. All of the above.

4. Safe lifting technique includes:
 - a. Facing away from the object.
 - b. Standing at arms-length from the object.
 - c. Bending at your knees, not your waist.
 - d. Gripping the object with your fingers.

5. When lifting an object:
 - a. Use your leg muscles.
 - b. Keep your head down.
 - c. Use your back.
 - d. Jerk to a stand.

6. When moving an object:
 - a. Keep the object close to your body.
 - b. Grasp the bottom corners closest to your body.
 - c. Keep the heaviest side of the object farthest from your body.
 - d. Turn by twisting your body.

7. Gas cylinders should be moved using:
 - a. The protective cap.

- b. A magnet.
- c. A chain.
- d. Its carrier.

Pool 2 (4 or 2 questions)

TRUE/FALSE

- 8. Prior to lifting an object you should determine its weight and balance.
- 9. The heavier the object, the greater the risk for injury.
- 10. Remove obstacles and tripping hazards from the path to where you are moving an object.
- 11. Wear sturdy, non-skid shoes when moving or lifting an object.
- 12. The stress on your lower back greatly decreases when objects are held far from the body.
- 13. Whenever possible pull, don't push an object.
- 14. Avoid moving several objects at one time by yourself.
- 15. Lower an object by bending at the knees.
- 16. Improper lifting and moving can result in injury.
- 17. You must report injuries to the appropriate personnel within your organization.
- 18. The risk of Carpal Tunnel Syndrome is increased by forceful or repetitive hand or wrist movement.

Moving, Lifting and Repetitive Motion – Clinics

Lesson 1: Objectives

Upon completion of this course, you will be able to:

- ❖ Define manual handling and body mechanics;
- ❖ Identify safe moving and lifting practices;
- ❖ Describe repetitive motion tasks;
- ❖ List injury prevention activities; and
- ❖ Appropriately report injuries.

Introduction

Every employee within your organization performs tasks that involve lifting, lowering, pushing, pulling, carrying, moving or holding an object. When a person uses force to perform these tasks it is called manual handling. Manual handling includes carrying boxes of paper, moving equipment, and lifting patients. Some employees perform tasks that require repetitive motion such as typing, working with small instruments, moping and painting. Employees should perform these tasks safely.

Body mechanics is the use of one's body to produce motion that is safe. Proper body mechanics can reduce stress and strain on your body therefore reducing the possibility of injury. Improper body mechanics such as bending at the waist to lift an object, twisting or reaching while lifting, and lifting from an awkward position increase your risk of injury. Proper arrangement of activities and workspace in accordance with ergonomic guidelines can also help prevent injuries that can result from repetitive motion.

Lesson 2: Safe Lifting and Moving Guidelines

Employees can be affected by improper lifting and moving. Staff is at risk for strains, sprains, and long-term disabilities (such as chronic back pain) that can result in missing work, decreased income and increased medical expenses.

The following guidelines are provided to assist you with lifting and moving. You should never lift or move anything unless you can do so safely. Be aware of your abilities and limitations.

Plan the Lift

- ❖ Determine the weight and balance of the object. If you do not know the weight, test it by lifting it a little bit and setting it down again. The heavier the object, the greater the risk for injury.

- ❖ Evaluate the area from which you are moving the object. Is there adequate space for lifting using proper body mechanics?
- ❖ Evaluate the need for mechanical aid (such as a dolly), an assistive device (such as a sliding board), or a team lift. If equipment is needed, lift and move the object by following the manufacturer's guidelines.
- ❖ Evaluate the area to which you are moving the object. Remove any obstacles or tripping hazards from your path. If the object is to be moved a long distance, plan areas to rest.
- ❖ Determine the need for personal protective equipment.

Lifting Technique

- ❖ Face the object. Place your feet shoulder width apart, with one leg slightly forward of the other. Wear sturdy non-skid shoes. Stand close to the object. If the object is not close, try sliding it towards you before attempting to lift it. The stress on your lower back greatly decreases when objects are held close to the body and when a long reach is not needed. Bend at your knees – not at your waist. Do not let your knees go over top of your toes. Keep your back bowed in and your shoulders level and facing the same direction as your hips. Grip the object with your palms, not just your fingers. Use handles if available. Keep your arms close to your body to help support the object. For objects that are awkward in size or shape, you may need to grip at opposite corners.

Lifting Maneuver

- ❖ Keep your buttocks back and head and chest up. Tighten your stomach muscles. Using your leg muscles, not your back, lift the object smoothly. If the object is too heavy and you have to stop, slowly lower it and get help.
- ❖ If a team is used to lift an object, choose one person to call out directions. Perform all maneuvers smoothly and in unison.

Moving the Object

- ❖ When carrying an object, keep it as close to your body as possible by grasping the bottom corners furthest from your body. Keep the heaviest side of the object closest. When turning, avoid twisting your body, instead, turn with your feet.
- ❖ Whenever possible push don't pull an object. Place the object on a rolling device or have wheels attached, if possible, to allow for easier movement. Keep wheels in good condition to reduce the amount of force used with these objects. Place the handles at waist or chest level. Stay close, keep

your arms close to your body and use your body weight to move the object. Let the movement of the object do some of the work for you. Get help with heavy or bulky objects, or objects in which you cannot see over.

- ❖ Don't move several objects at one time by yourself.

Lowering the Object

- ❖ Put the object down by bending at the knees and bowing in your lower back. Keep your feet apart, if possible. Set down a corner of the object and slide your hand out from under it. Settle the rest of the object.

Quiz Question:

Place the following tasks in the appropriate order when lifting and moving.

- 1. Determine the weight and balance of the object. Evaluate the area from which you are moving the object. Evaluate the need for mechanical aid, an assistive device, a team lift, or personal protective equipment. Evaluate the area to which you are moving the object.**
- 2. Place your feet shoulder width apart, with one leg slightly forward of the other. Stand close to the object, bend at your knees, and grip the object with your palms.**
- 3. Keep your buttocks back and head and chest up. Tighten your stomach muscles. Using your leg muscles, lift the object smoothly.**
- 4. Keep the object as close to your body as possible by grasping the bottom corners furthest from your body.**
- 5. Put the object down by bending at the knees and bowing in your lower back. Set down a corner of the object and slide your hand out from under it. Settle the rest of the object.**

Lesson 3: Patient Lifting and Moving

Many of the guidelines previously provided for the safe lifting and moving of objects also apply to the safe lifting and moving of patients.

- ❖ When planning a lift, evaluate the patient and review his or her medical record, if you are authorized. Determine the patient's weight, degree of assistance needed, and other important information. Prepare the patient for the lift or move by explaining the task, giving instructions and allowing time for questions.

Common patient lifting and moving maneuvers:

To help a lying patient to a sitting position: Place the patient on his or her side, facing you. Raise the head of the stretcher. Place one of your arms under the patient's shoulder and your other arm over the patient's thighs. At the same time, lift the patient's upper body and move his or her legs over the edge of the stretcher, placing the patient in a sitting position.

To transfer a sitting patient: Position equipment such as a wheelchair. Place the patient's feet flat on the floor. Face the patient. Bend your knees and align them with the patient's knees. Hold the patient by a transfer belt or use an approved hold. Using proper body mechanics lift the patient to a standing position. If the patient is too heavy and you have to stop, slowly lower the patient and get help. Encourage the patient to support his or her weight as much as possible. Turn by moving your feet, helping the patient to do the same. Gently help lower him or her into a sitting position.

Lesson 4: Mechanical Aids and Assistive Devices

The mechanical aids and assistive devices available within your organization have been selected based upon the specific needs of its patients and employees. You must be properly trained on this equipment prior to use and should follow the manufacturer's guidelines. Your selection of equipment must be based upon the object's or patient's size and condition, and the type of lift and move.

Lesson 5: Additional Guidelines

As mentioned, you should never lift or move anything unless you can do so safely. Special consideration should be given regarding the following:

Gas cylinders

- ❖ When moving or lifting a gas cylinder use an appropriate carrier. Since gas cylinders are heavy and awkward, they require special care and equipment for moving, lifting and securing so that they don't fall or tip over and cause an injury. Do not lift the cylinder by its protective cap or guard or by using magnets, chains or slings because this may damage the valves.

Storage areas

- ❖ Store heavy objects on lower shelves and racks. Label extra heavy or unbalanced objects to alert other employees.
- ❖ A ladder or step stool should be used for any object that must be reached or placed on a rack higher than shoulder level. To remove the object, pull the object from the shelf using the strength of your legs and hand it to someone else before climbing down. To place the object, have someone hand it to you while you are on the ladder. Place a corner of the object on the rack or shelf and slide your fingers free. Settle the object securely on the rack or shelf.

Lesson 6: Repetitive Motion

Some workplace injuries are caused by repetitive motion required for the completion of job assignments. The stress and strain of constantly repeating an act with your hands can cause swelling of the tendons in the wrist, called Carpal Tunnel. Carpal Tunnel can cause tingling and numbness in the thumbs, index, and middle fingers and often results in loss of grip to the extent of not being able to hold the simplest items such as a cup or newspaper. The risk of Carpal Tunnel Syndrome is increased by forceful or repetitive hand or wrist movement or the use of vibrating equipment.

Lesson 7: Prevention of Injuries

Improper lifting and moving can result in injury. Injury can follow sudden trauma or repeated acts of improper lifting and moving. To eliminate or minimize injuries you need the correct amount of strength, flexibility, and overall quality of life. You need to exercise, eat right, use proper body mechanics and stretch as often as possible to help prevent injuries, and to recover more quickly if you are injured.

To prevent Carpal Tunnel Syndrome, you should arrange activities and workspace in accordance with ergonomic guidelines and use proper body mechanics to avoid the physical stress that contributes to this disabling condition. Evaluate the placement of your workstation, including the desk, computer keyboard, mouse pad, and screen, and the height and support of your chair. Proper placement can decrease the complications of Carpal Tunnel and relieve neck and back strain. Take breaks, reposition, alternate activities, and stretch as often as possible.

Lesson 8: Reporting

(NOTE: You may wish to display contact information for the appropriate personnel)

It is important to report injuries to the appropriate personnel within your organization. These individuals are responsible for recording and appropriately reporting these injuries. With proper reporting and recordkeeping, injury patterns can be studied and valuable information about their causes and prevention measures can be identified.

Lesson 9: Conclusion

(NOTE: You may wish to display contact information for the appropriate personnel to contact within your organization.)

Your organization is committed to providing a safe and healthy environment for their employees and patients. If you have any questions about body mechanics, injuries, or reporting of these incidents, contact the appropriate personnel within your organization.

Test Questions (10 questions Pre-test or 5 questions Post-test)

Pool 1 (6 or 3 questions)

MULTIPLE CHOICE

1. Improper body mechanics include:
 - a. Bending at the waist to lift an object.
 - b. Twisting or reaching while lifting.
 - c. Lifting from an awkward position.
 - d. All of the above.

2. Improper lifting and moving can result in:
 - a. Strains.
 - b. Sprains.
 - c. Long-term disabilities.
 - d. All of the above.

3. In planning for a lift or move, you must:
 - a. Evaluate the area from which you are moving the object.
 - b. Evaluate the area to which you are moving the object.
 - c. Determine the weight and balance of the object.
 - d. All of the above.

4. Safe lifting technique includes:
 - a. Facing away from the object.
 - b. Standing at arms-length from the object.
 - c. Bending at your knees, not your waist.
 - d. Gripping the object with your fingers.

5. When lifting an object:
 - a. Use your leg muscles.
 - b. Keep your head down.
 - c. Use your back.
 - d. Jerk to a stand.

6. When moving an object:
 - a. Keep the object close to your body.
 - b. Grasp the bottom corners closest to your body.
 - c. Keep the heaviest side of the object farthest from your body.
 - d. Turn by twisting your body.

7. Gas cylinders should be moved using:
 - a. The protective cap.

- b. A magnet.
- c. A chain.
- d. Its carrier.

Pool 2 (4 or 2 questions)

TRUE/FALSE

- 8. Prior to lifting an object you should determine its weight and balance.
- 9. The heavier the object, the greater the risk for injury.
- 10. Remove obstacles and tripping hazards from the path to where you are moving an object.
- 11. Wear sturdy, non-skid shoes when moving or lifting an object.
- 12. The stress on your lower back greatly decreases when objects are held far from the body.
- 13. Whenever possible pull, don't push an object.
- 14. Avoid moving several objects at one time by yourself.
- 15. Lower an object by bending at the knees.
- 16. Improper lifting and moving can result in injury.
- 17. You must report injuries to the appropriate personnel within your organization.
- 18. The risk of Carpal Tunnel Syndrome is increased by forceful or repetitive hand or wrist movement.