Objectives

1. Define key terms introduced in this chapter.
2. Explain the importance of always using proper techniques when lifting, carrying, and moving patients and equipment (slides 14-19).
3. Define the term body mechanics (slides 14-19).
4. Demonstrate each of the four principles of body mechanics listed in the text when lifting and moving patients and equipment (slides 15-19).
5. Explain the roles of proper body posture and physical fitness in preventing injuries resulting from lifting and moving patients (slides 20-21).
Objectives

6. Describe considerations in teamwork and communication with partners and patients when lifting and moving patients (slides 22-23).

7. Apply the general guidelines for lifting and moving patients that are described in the text (slides 24-25).
Objectives

8. Discuss the advantages, disadvantages, and steps of each of the following lifting and moving techniques and processes (slides 26-35):
   a. Power lift
   b. Power grip
   c. Squat lift
   d. One-handed equipment carrying
   e. Reaching
   f. Log roll
   g. Pushing and pulling

9. Differentiate between scenarios in which emergency, urgent, and nonurgent moves are indicated (slides 36-54).
Objectives

10. Given a scenario, demonstrate an appropriate moving technique to be used, including (slides 36-54):
   a. Armpit-forearm drag
   b. Shirt drag
   c. Blanket drag
   d. Rapid extrication
   e. Direct ground lift
   f. Extremity lift
   g. Direct carry
   h. Draw sheet method

11. Demonstrate the steps required to securely “package” a patient for transport (slide 55).
Objectives

12. Describe the proper use, advantages, disadvantages, and limitations of each of the following pieces of equipment used in lifting and moving patients (slides 56-72, 81-87):
   a. Wheeled stretcher
   b. Portable stretcher
   c. Stair chair
   d. Backboard
   e. Scoop stretcher
   f. Basket stretcher
   g. Flexible stretcher
   h. Devices for bariatric patients
Objectives

13. Given a scenario involving any of the following types of patients, demonstrate proper positioning of the patient (slides 73-78):
   a. Unresponsive patient
   b. Patient with chest pain or difficulty breathing
   c. Patient with known or suspected spinal injury
   d. Patient in shock
   e. Patient with nausea or vomiting
   f. Patient in third trimester of pregnancy
   g. Infant or toddler
   h. Elderly patient
   i. Patient with a physical disability
14. Discuss special considerations when preparing patients for air medical transport (slides 79-80).
15. Discuss special considerations when using a neonatal isolette (slides 88-90).
Topics

- Body Mechanics for Safe Lifting
- General Guidelines for Lifting and Moving
- Lifting and Moving Patients
- Packaging for Transportation
- General Guidelines for Carrying a Patient Using a Backboard, Portable Stretcher, or Flexible Stretcher
Respond to 605 Lindsey Drive in Rockaway for a 72-year-old patient routine transfer to Dover General.
Upon Arrival

- You are a probationary EMT with a training officer and an EMT
- Patient, Amanda Sanchez, goes to dialysis three times a week
- Cannot walk down a flight of stairs
- Snow and ice on the walkway to the house
How would you proceed to package and transport this patient?
Body Mechanics for Safe Lifting
Four Basic Principles
Keep the weight of the object as close to the body as possible.
To move a heavy object use the leg, hip, and gluteal muscles plus contracted abdominal muscles.
Reduce the height or distance through which the object must be moved.
Posture and Fitness
- Lordosis
- Kyphosis

Excessive kyphosis (slouch)

Excessive lordosis (swayback)
Communication and Teamwork
• Scene
• Weight of the patient
• Physical abilities and limitations
• Equipment
General Guidelines for Lifting and Moving
• Know limitations
• Use even number lifters
• Keep weight close
The Power Lift
Best lift to protect against injury and protect the patient
The Squat Lift
- Weaker leg forward
- Squat down
- Push up on stronger leg
One-Handed Equipment Carrying Technique
• Keep back locked
• Use proper body mechanics
Reaching
Avoid twisting and hyperextending
Pushing and Pulling
• Keep load near body
• Back straight, knees bent slightly
• Do not push or pull above head
Emergency Moves
• Environmental danger to patient or rescuer
• Access to other patients who need lifesaving care
• Inability to provide lifesaving care because of the patient’s location or position
Emergency Moves

The Armpit-Forearm Drag
• Good for ground moving
• Pull on long axis of the body
Emergency Moves

The Shirt Drag
Do not use if patient is wearing a t-shirt
Emergency Moves

The Blanket Drag
• Good for single rescuer
• Can use a jacket
Urgent Moves

Rapid Extrication
Should be used for patients with any abnormality of airway, breathing, oxygenation, circulation, or critical injuries
Nonurgent Moves

Direct Ground Lift
- May be helpful to use a backboard
- Bend at hips, not at waist
- Keep back straight
Nonurgent Moves

Extremity Lift
• Do not use for suspected spine or extremity injuries
• Keep back straight
Nonurgent Moves

Direct Carry Method
Good for bed to stretcher
Nonurgent Moves

Draw Sheet Method
• Position stretcher next to bed
• Grasp sheet firmly
• Use abdominal and gluteal muscles
Packaging for Transportation
Equipment

Wheeled Stretcher

Back to Objectives
• Lift-in cot
• Roll-in cot
• Weighs approximately 70 pounds

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Equipment

Bariatric Stretchers and Devices
• Bariatric devices
• Ramps and winches

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Equipment

Portable Stretchers
• Should not be used for spine immobilization
• Good for confined spaces
Equipment

Stair Chair
- Good for confined areas
- Do not use with patients with AMS, spine injury, or lower extremity injury
Equipment

Backboards
Long Backboard
Vacuum Stretcher

KED

(© Ferno Corporation)
Equipment

Scoop Stretcher
- Patients up to 300 pounds
- Fits around patient
- Good for hip fractures
Equipment

Basket Stretcher
• Great for rough terrain
• Pad the edges for smoother transport
Equipment

Flexible Stretcher
Useful for narrow and restricted areas
Patient Positioning
Unresponsive, nontrauma patient should be placed in left lateral recumbent position.
A patient with chest pain, discomfort, or with breathing difficulties should be placed in a position of comfort.
Pregnant women should be laid on left side to prevent hypotensive syndrome.

Has been shown that placement on either side is enough to relieve the pressure.
If the seat was involved in a crash and structural integrity is in question, do not use it.

Infants and toddlers should be secured into their own car seat if not critically injured.
Take care to avoid accidental injury in elderly patients.
Packaging Patients for Air Transport
• Make sure patient is well secured to backboard
• Secure all loose equipment
• Do not approach aircraft until instructed
• Minimize the number of people under the rotors at all times
General Guidelines for Carrying a Patient Using a Backboard, Portable Stretcher, or Flexible Stretcher
Two-Person Carry
• Stronger person at head
• Use a spotter if possible
• Watch for tripping hazards
• Monitor for fatigue
Four-Person Carry
• All rescuers face forward
• Always use hand closest to the patient
Carrying a Supine Patient on Stairs
• Use a stair chair if possible
• Use a spotter if possible
• Feet first going down, head first going up
Neonatal Isolette

Back to Objectives
Make sure it is secured into stretcher mounts
Either lifted or rolled into ambulance
Follow-Up
CASE STUDY

Lifting and Moving

• Gather patient’s belongings
• Place patient in stair chair
  – Remind of falling sensation
• Carry patient down stairs
• Load patient on cot outside of truck
• Transport safely to hospital
Critical Thinking Scenario

- 76-year-old female cannot breathe when lying flat
- Found in bed on the second floor of her home and down a narrow hallway
- She is propped up in bed, using several pillows
1. What device should you use to move the patient to the ambulance?
2. What special circumstances should you consider when selecting the equipment?
3. How would you move her from the bed to the extrication device/equipment?
4. What techniques will you use to prevent injuring yourself when performing the moves?
Reinforce and Review

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