

Lifting, Handling & Moving

Objectives

- Review Risk factors
- Examine Body mechanics
- Importance of proper posture & fitness
- Guidelines for lifting & moving
- Emergency moves
- Non-emergency moves
- Patient positions
- Patient carrying devices

Risk Factors

Sporadic or continuous lifting
 Poor posture from constant sitting in the unit
 Burst of exertion on tired, stiff, unfueled bodies
 Mental attitude
 Most providers are young, healthy, and have a strong sense of invulnerability
 Lifestyle, posture and stress
 Overweight/Obesity
 Flexibility, (Lack of)
 Poor physical condition

Lifting Dynamics

Every situation is unique
 Apply the basic principles of lifting to each situation
 Think it through - *Know what you are going to do before you start*
 Determine who will be the team leader - *Only one person calls the shots*
 Communicate with team members

Lifting Dynamics

Check your footing
 Maintain the most balanced position possible
 Use your leg muscles, not your back - *Use smooth continuous motions, do not jerk*
 Exhale during exertion - *This can add power to the lift*
 Keep the weight close to your body - *With palms up, the load is brought closer to your body*
 Know your limits

BODY MECHANICS



Keep the weight of the weight of the object as close to the body as possible.

Use leg, hip & buttock muscles plus contracted abdominal muscles.

“Stack”

Reduce weight or distance that must be moved

Guidelines for Lifting & Moving

- Know your physical abilities & limitations
- Know the weight of the patient prior to lifting
- Know the weight limitations of the equipment
- Call for additional help if necessary
- Try to use even number of persons for lifting
- Use wheeled stretchers whenever possible

BODY MECHANICS DURING LIFTING AND MOVING

- Only move a victim you can safely handle
- Get additional help if needed
- Look where you're walking or crawling
- Move forward if possible
- Take short steps
- Bend at hips and knees
- Lift with legs, not back
- Keep load close to the body
- Keep patient's body in line when moving

Injury Prevention

Don't hurry - *The faster you go, the less you think out your plan*

Communicate - *Let others know what, how & who is to do which job*

Lack of communication can prove detrimental

Avoid awkward positioning - *Be aware of body position & footing*

When maintained properly, your back is a powerful tool

Once injured, you are 3-5 times more likely to experience future injury

Injury Prevention

Think about lifting dynamics before and during each lift

Consider the use of a back support belt

Use help wisely - *Bystanders like to help, be sure you explain what needs to be done before the lift is done to prevent injury to the bystander & yourself*

POWER LIFT

- Get in position
- Your feet should be shoulder width apart
- Turn your feet slightly outward
- Ensure that your feet are flat on the ground

POWER LIFT

As you begin your lift:

- Your back should remain locked
- Your feet should remain flat
- Tighten the muscles of your back
- Tighten the muscles of your abdomen

POWER LIFT

In the power grip,

Palms & fingers should come in complete contact with the object & fingers should be bent at the same angle.

POWER LIFT

As you return to the standing position, make sure your back is locked in and your upper body comes up before your hips.

Emergency Moves

You should use an emergency move to move a patient before initial assessment & care are provided when there is some potential danger, and you and the patient must move to a safe place to avoid possible serious harm or death.

Non-Emergency Moves

When both the scene & the patient are stable, you & your partner may choose one of several methods for lifting & carrying a patient. The two general methods are the Direct Ground Lift and the Extremity Lift.

Direct Ground Lift

Is used for patients with no suspected spinal injury who are found lying supine on the ground.

- Line up on one side of the patient
- One person should be at the patient's head
- One person should be at the patient's waist
- One person should be at the patient's knees

Direct Ground Lift

As a team and on signal, each Paramedic rolls the patient in toward his / her chest.

Again on signal, the team stands & carries the patient to the ambulance cot.

The steps are reversed to lower the patient onto the ambulance cot.

Extremity Lift

The extremity lift may also be used for patients with no suspected extremity or spinal injuries who are supine or in a sitting position on the ground.

The first Paramedic kneels behind the patient's head as the second Paramedic kneels at the patient's feet.

The patient's hands should be crossed over their chest.

Extremity Lift

The first Paramedic places one hand under each of the patient's armpits while the second Paramedic grasps the patient's wrists.

The two Paramedics pull & lift the patient into a sitting position.

The first Paramedic then reaches his / her arms through the patient's armpits & grasps the patient's wrists.

Extremity Lift

The second Paramedic moves to a position between the patient's legs, facing in the same direction as the patient.

The second Paramedic will then slip his / her hands under the patient's knees.

Both Paramedics then move up to a crouching standing position.

Extremity Lift

Both Paramedics will make sure they are balanced with a good grip on the patient.

On command, both Paramedics stand fully upright & move the patient to a stretcher.

Keep in mind that this lift & carry method increases pressure on the patient's chest, so the patient may be uncomfortable in this position.

Patient Carrying Devices

- **Wheeled Stretcher / Ambulance Cot**
- **Scoop Stretcher**
- **Long Spine Board**
- **Stair Chair**
- **Portable Stretcher**

Wheeled Stretcher / Ambulance Cot

Advantages

- Enables movement without carrying
- Accommodates variety of positions & heights
- Safe traversal of stairways & curbs
- Can be lifted & lowered from ends or sides
- Durable
- Mechanically simple
- Comfortable

Wheeled Stretcher / Ambulance Cot

Disadvantages

- Requires two Paramedics to load & unload
- X-ray opacity
- Adds extra weight



Scoop Stretcher

Advantages

- Can be used in confined spaces
- Allows easy application of restraints
- Integrates well with other equipment



Scoop Stretcher

Disadvantages

- Must be carried
- Requires padding
- Should be pre-warmed
- May consume considerable space

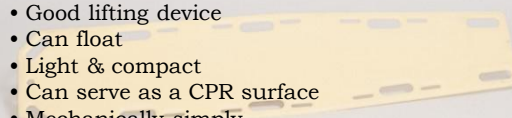
Not Recommended For Patients With Suspected Spinal Injuries



Long Spine Board

Advantages

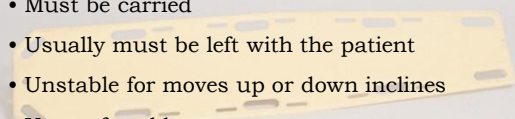
- Great spinal immobilizer
- Good lifting device
- Can float
- Light & compact
- Can serve as a CPR surface
- Mechanically simple
- X-ray translucency
- Can be carried & loaded from ends or sides
- Integrates well with other equipment



Long Spine Board

Disadvantages

- Must be carried
- Usually must be left with the patient
- Unstable for moves up or down inclines
- Uncomfortable
- Wooden types may develop splinters
- May weaken with time



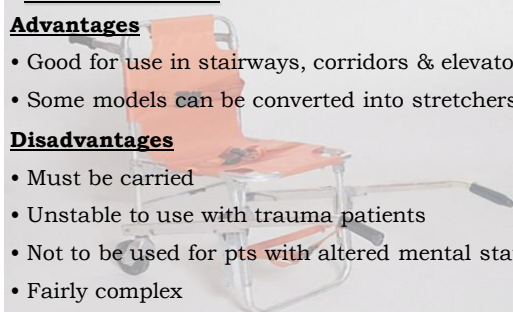
Stair Chair

Advantages

- Good for use in stairways, corridors & elevators
- Some models can be converted into stretchers

Disadvantages

- Must be carried
- Unstable to use with trauma patients
- Not to be used for pts with altered mental status
- Fairly complex
- May consume considerable space



Portable Stretcher

Advantages

- Light weight, compact & easy to store
- Excellent use as an auxiliary stretcher
- Can be used in confined spaces
- Some models utilize folding wheels & posts
- Easily loaded & off loaded

Portable Stretcher

Disadvantages

- Must be carried
- Metal styles interfere with some x-rays