Emergency medical service in almost all cases, involves patient moving, lifting and stretcher handling. Because of the frequency of lifting, back injuries to fire fighters are common. Back injuries can lead to lost time and wages at work, but learning to assess each situation and using proper lifting techniques can reduce the likelihood of back injuries.

**General Principles**

1. **Assess the situation.** Determine how far you will need to carry a patient and whether you'll need to lift a patient from the ground to a stretcher. If you are outdoors and will be carrying a stretcher up or down a slope or on rocky terrain, develop a plan before attempting to carry the patient. Assessing the situation before lifting will help you determine how to do the lift safely and what equipment you need.

2. **Determine if you need additional personnel.** Situations such as a very overweight patient or the need to carry the stretcher down a flight of stairs may require additional help. Assess the situation and call earlier rather than later for additional response before attempting such a lift.

3. **Use lifting assistant equipment if needed.** Determine what lifting devices you have and learn how to use them. For example, a stair chair is specially designed to carry patients down stairs.

4. **Lift the stretcher properly once the patient is on it.** You need to lift the patient and the stretcher from its lowest position to the height of the ambulance to get it inside for transport. Stand close to the stretcher with feet shoulder width apart. Keep your stomach muscles tight and back straight. Lift with your legs and bend at the knee, not at the waist.

5. **Talk with your partner or other team members.** You need to work together and be sure all responders know the plan when lifting a patient. Inform your team member when you will start the lift so you and your partner will be lifting together.

6. **Lift the stretcher properly when the patient is off it.** Although the risk of injury is great when lifting a loaded stretcher, members lifting tend to prepare themselves better for the heavy lift. Many back injuries occur when the risk is assumed to be less because the load is lighter and proper lifting techniques are dismissed.

7. **Keep yourself in good shape.** Back injuries happen more frequently when you have weak back and abdominal muscles. Do strength training to keep arms, legs, back and shoulders strong. Include abdominal exercise such as crunches to keep the stomach muscles strong. This helps stabilize the back. Department fitness trainers are available to help determine specific exercises.
Specific Guidelines

Safe carrying on stairs
One of the most difficult carries is to carry the patient up a stairway. Try to carry heavy patients up a stairway with two people at the top, shoulder to shoulder, and two at the bottom of the stretcher.

- Always carry patients head first up the stairs and feet first down the stairs.
- Try to use a stair chair if the patient's condition allows it. If a stair chair is not available, use a light but sturdy kitchen chair. If neither are available, use the extremity lift.
- Keep your back in the locked-in position.
- Flex at the hips, NOT the waist, and bend at the knees.
- Keep the weight and your arms as close to your body as possible.

Reaching

- Keep your back in locked-in position.
- Avoid stretching or overreaching when reaching overhead.
- Avoid twisting.
- Keep your back straight when leaning over patients.
- Lean from the hips.
- Use shoulder muscles with log rolls.
- Avoid reaching more than 15-20" in front of your body.
- Avoid reaching and strenuous activity for more than 1 minute.

Pushing and pulling

- Push whenever possible rather than pull.
- Keep your back locked-in.
- Keep elbows bent with arms close to sides.
- Keep the line of pull through the center of your body by bending your knees.
- Keep weight close to body.
- Push at a level between your waist and shoulders.
- Use kneeling position if weight is below waist level.
- Avoid pushing and pulling from overhead position.

Reference: