Safe Manual Material Handling

Many jobs require frequent lifting, carrying, pushing, pulling, lowering and raising materials by hand. These job tasks are often referred to as manual materials handling. Staff who lift or perform other materials handling tasks may be at risk for back or other injuries. These injuries may be prevented by redesigning jobs and practicing safe handling techniques.

Layout of Work Area

- The layout of work areas can be arranged to prevent awkward postures such as bending, twisting, and over-reaching
- Work surfaces should be at waist height, or height-adjustable, to prevent bending
- There should be sufficient space to turn around and prevent twisting
- Materials that will be manually lifted should not be stored directly on the floor
- Frequently used and heavy items should be stored between knee and waist height
- Elevated platforms or step stools should be provided to reach items above chest level

S.M.A.R.T. Lifting Technique

Size up the load
- Assess the size, weight, and shape. Remove obstacles from the load (such as loose wrapping materials).
- Assess whether the load actually needs to be moved
- Where is the load going to be placed? Remove obstacles from your path.
- Determine whether mechanical or assistance from a co-worker is required

Move the load as close to your body as possible
- Stay close throughout the lift
- The whole hand should be used to ensure a firm grip

Always bend your knees
- Maintain balance
- Keep feet apart and in a comfortable position
- Minimize bending at the waist
- Bend your knees to a semi squat

Raise the load with your legs
- Lift smoothly, without jerking
- Maintain the normal curve of your spine throughout the lift
- Tighten the abdominal muscles and exhale while lifting

Turn your feet in the direction that you want to move the load
- Avoid unnecessary bending, twisting, and reaching
- Change direction by turning your feet and not your back
- To set down a load, squat down and keep your head up. Let your legs do the work
The Power Zone
The power zone for lifting is close to the body, between mid-thigh and mid-chest height. Comparable to the strike zone in baseball, this zone is where arms and back can lift the most with the least amount of effort. (see picture)

Team Lifting
- Team lifts are appropriate if:
  o The load is too heavy for one person
  o The load is large, bulky, or oddly-shaped
  o You feel uncomfortable lifting the load by yourself (and do not have the proper equipment)
- Whenever possible, team member should be of around the same height and build. If this is not possible, taller members should be at the back.
- Designate a lift leader, who:
  o Plans and coordinates the lift
  o Provides simple and clear instructions
  o Ensures that you lift and lower the load together
- Assess the weight of the load
- Follow the S.M.A.R.T. lifting technique
- The lift leader should ensure that all team members are comfortable once the load has been lifted. If not, the load should be carefully lowered.

Overhead Loads
- Always use a stool or ladder to lift loads above chest level
- Test the weight of the load before removing it from the shelf
- Slide the object toward you, to the edge of the shelf
- Hold the load close to your body as you lower it

Awkward loads
- Sometimes different lifting techniques need to be adopted to move awkward loads

Over-sized or Odd-shaped
- In many cases, oversized loads may be light enough to carry, but block vision or may be difficult to hold. In such cases, use mechanical assistance or seek help from a co-worker.

Long, light objects
- Support the load on your shoulder
- Keep the front end higher than the rear

Pushing and Pulling
- Keep your back straight, avoiding excessive bending or twisting
- Use your legs to push or pull
- Keep the load as close to your body as possible
- When using mechanical aids to push and pull, the handles should be positioned at a height between the shoulder and waist
- When pushing on a slope or ramp, ask for assistance whenever necessary. Keep in mind that the incline can significantly increase the forces
- Uneven loads also require increased push and pull forces; seek appropriate assistance when necessary

References: