ERGONOMICS

SAFE LIFTING
&
GRIPPING TECHNIQUES

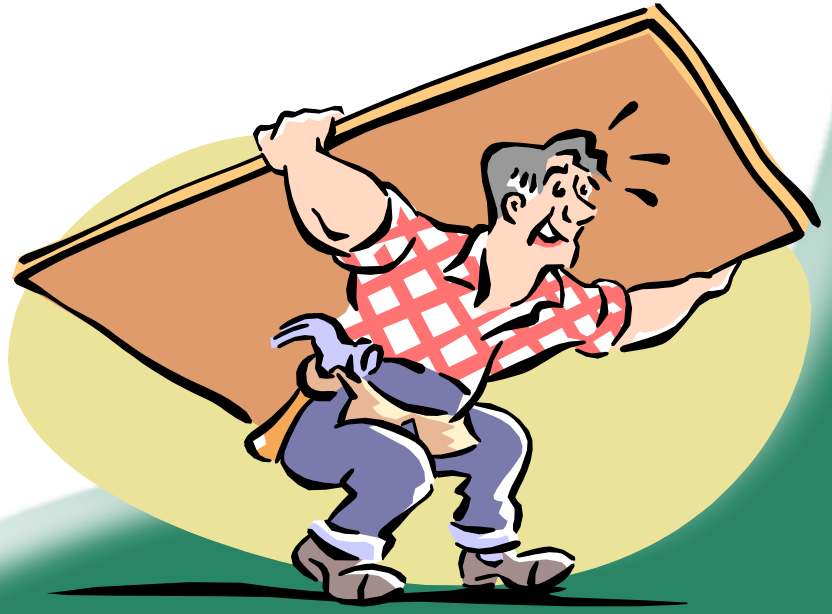
Presented by CEsafety

SAFE LIFTING GUIDELINES

- Our company is committed to providing a safe and healthy work environment and to preventing occupational injuries and illnesses, including those arising from ergonomic deficiencies.
- To meet this goal the proper interface between employees and their work environment must be ensured. Manual lifting tasks constitute one such interface.
- To reduce the risk of injuries and illnesses from lifting, as a part of its safety and occupational health program we have established a manual lifting limit of 50 pounds under ideal conditions.

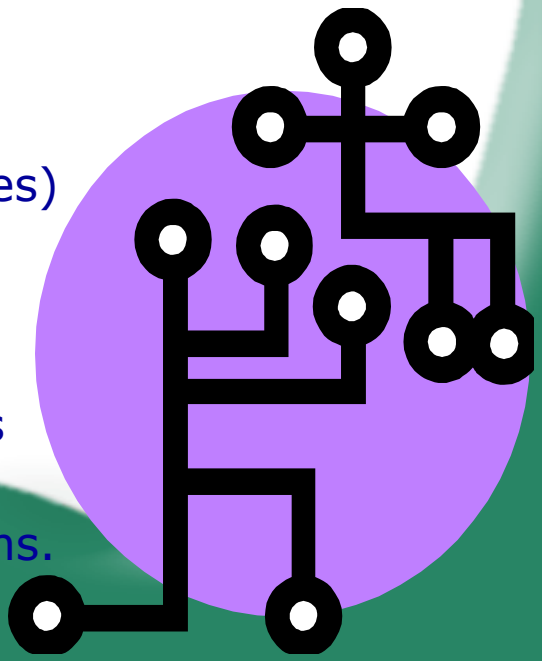
General Guidelines:

- The safety of a manual lift depends not only on weight of the load, but also on:
- the horizontal distance of the load from the employee,
- the vertical distance traveled
- the frequency of the lift, and
- the dimensions and weight distribution of the load.
- While detailed formulas are available for incorporating these factors in estimating the safety of a given lift (NIOSH Lifting Guidelines), a simplified 'rule of thumb' is needed in order to be readily and widely used.



MANUAL LIFTING RISK FACTORS:

- Limitations on safe lifting are governed by a combination of job and personal risk factors, including:
  - bending motions
  - twisting motions, specially under load
  - reaches away from the body (specially >8 inches)
  - lifting/lowering - from below knuckle height (approx. 30 inches)
    - above shoulder
    - loads >7.5 lbs. When multiple risk factors present
    - loads >30 lbs. Under reasonable conditions.
  - Push/pull forces >50 pounds
  - carrying loads >30 pounds



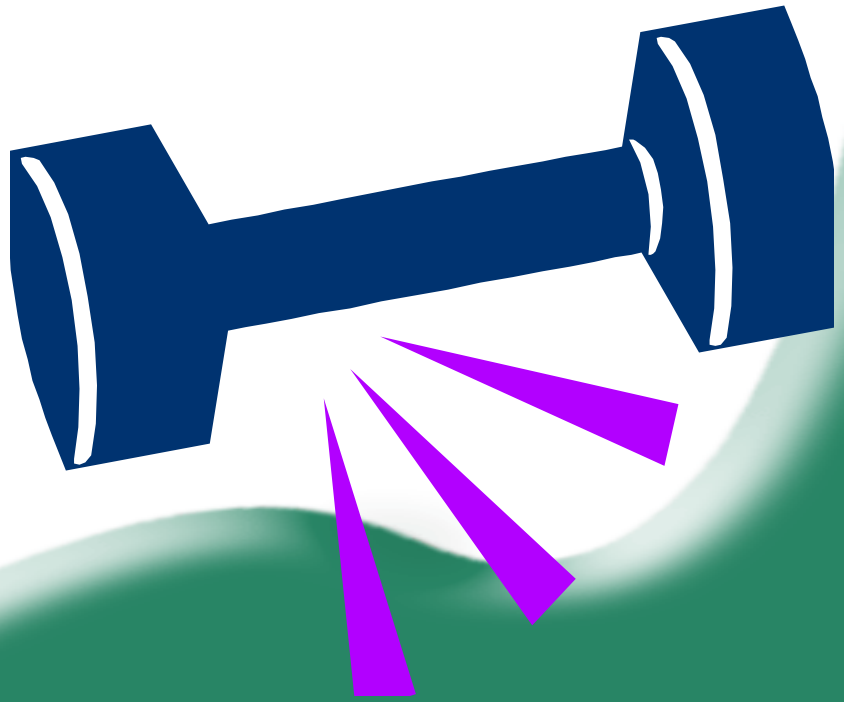
Manual Lifting Factors Risk (cont'd).

- repetitive lifting - single motions or performed more than 50% of the time. Production standard exceeds 500 units per shift.
- Loads with awkward size, shape, or weight distribution.
- Employees who have: - chronic back problems
  - no training on back injury prevention
  - poor muscle strength or balance

Thus the following general guidelines are recommended for ALL manual lifting tasks:

FIFTY (50) POUNDS:

- Fifty pound limit under good lifting conditions:
  - upright
  - untwisted posture
  - balanced load close to the body
  - good grasp (handles, etc.)



THIRTY(30) POUNDS:

- Thirty pound limit for less than good lifting conditions (or less than 30 pounds for poor conditions).
  - Distance to be traveled
  - unbalanced or asymmetrical load
  - awkward posture involved

Job Hazard Analysis:

- Areas should evaluate all jobs tasks to determine which specific jobs are considered at high risk for back injury or other materials handling hazards. Use the lifting risk factors and the area ergonomic resource for reference.

Loads Exceeding Recommended Guidelines:

- All tasks exceeding the guidelines should have a Physical Demands Description performed by CEsafety.
- Such tasks will be described, explained and limitations placed as to what constitutes a safe lift in each circumstance.

Training:

- Employees should review the Manual Lifting Guideline annually and have this documented on their training records.

- Employees on high risk jobs (as deemed by the area) should receive annual back injury prevention training and have this documented on training records. Training should include general back health, principles of safe materials handling, and a review of the lifting guidelines.

PRINCIPLES OF A SAFE LIFT: Step 1

- **Get a firm footing:**

  Keep your feet apart (about shoulder width) for a stable base with toes pointed slightly outward.

Step 2:

- **Bend your knees.**

  Don’t bend at the waist. Keep the upper body erect.

Step 3:

- **Tighten stomach muscles.**

Abdominal muscles support your spine when you lift, off-setting the force of the load.

Step 4:

- **Lift with your legs.**
- Let your powerful leg muscles do the work, not your weaker back muscles. Lift slowly and smoothly and avoid jerking.

Step 5:

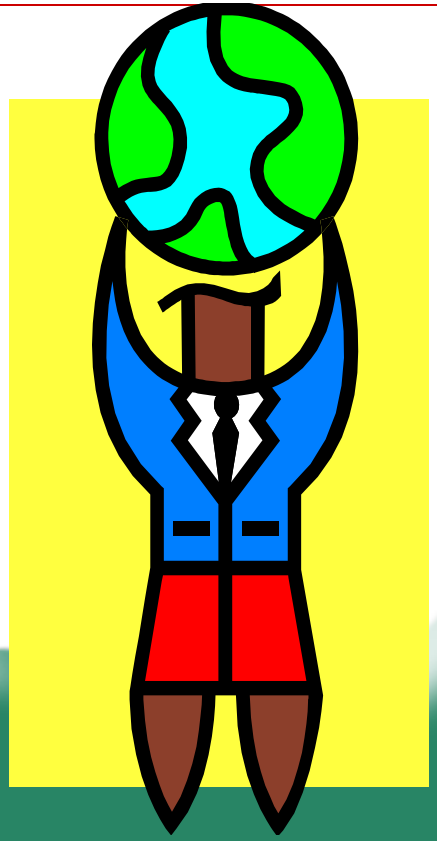
- **Keep the load close.**

The closer the load is to your spine, the less force it exerts on your back. Avoid long reaches or static postures.

Step 6:

- **Keep your back upright.**

  Whether you are lifting or putting down the load, don't add the weight of your body to the load. Avoid twisting. Take a few steps to position yourself correctly.



Two Person Lifts:

- When the load is deemed to be excessive for one person, a two person lift may be considered.
- If used, this lift must be well coordinated. Each employee must apply and release pressure at the same time to avoid injury.

Lift assists:

- When loads are excessive, then other engineering methods should be examined
- Use a lift truck, a hoist, come along or any other safe lifting device.

Unusual Situations:

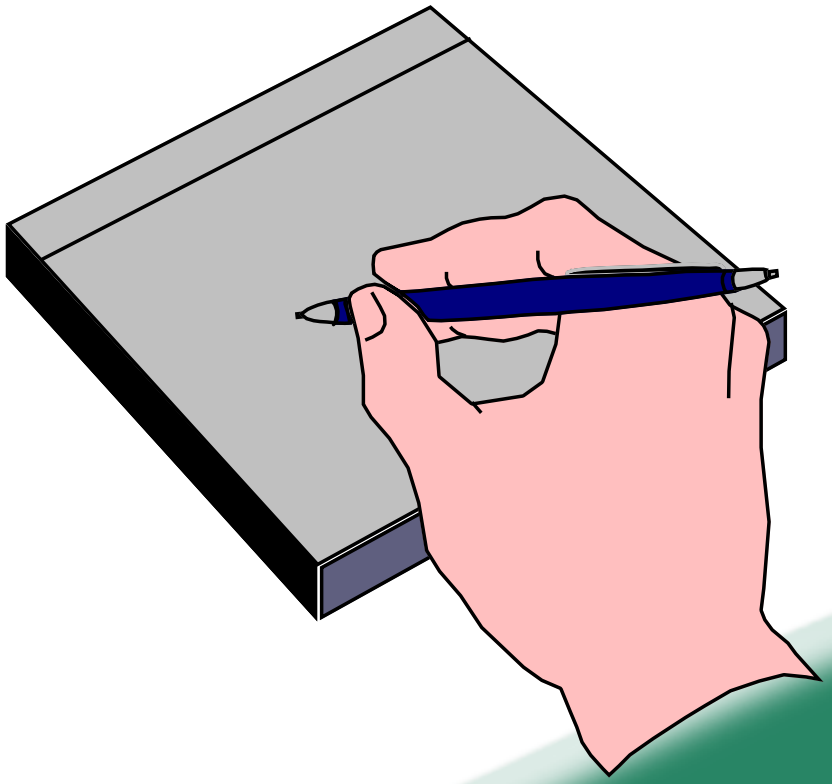
- If the answer to any of the following is “YES”, then the employee should re-examine the particular task and consult with their Supervisor, safety committee resource or Bill Godkin of CEsafety to determine the safest way to move the material…

- Does the task fall outside site's load guidelines or there is no approved procedure?
- Is there a high potential for injury even if using normal precautions?
- Does the task require mechanical assistance such as pry bars, rollers, or come-alongs?
- Does the task require rigging?
- Do the employees assigned to the job have lack of sufficient training or knowledge to accomplish the job without incident?

GRIPPING GUIDELINES

- Your hands grip and your wrists bend and twist millions of times annually. Certain movements may increase your chances of developing repetitive motion disorders.
- By making small changes in how you work, you can help to avoid problems down the road.

•RISK FACTORS



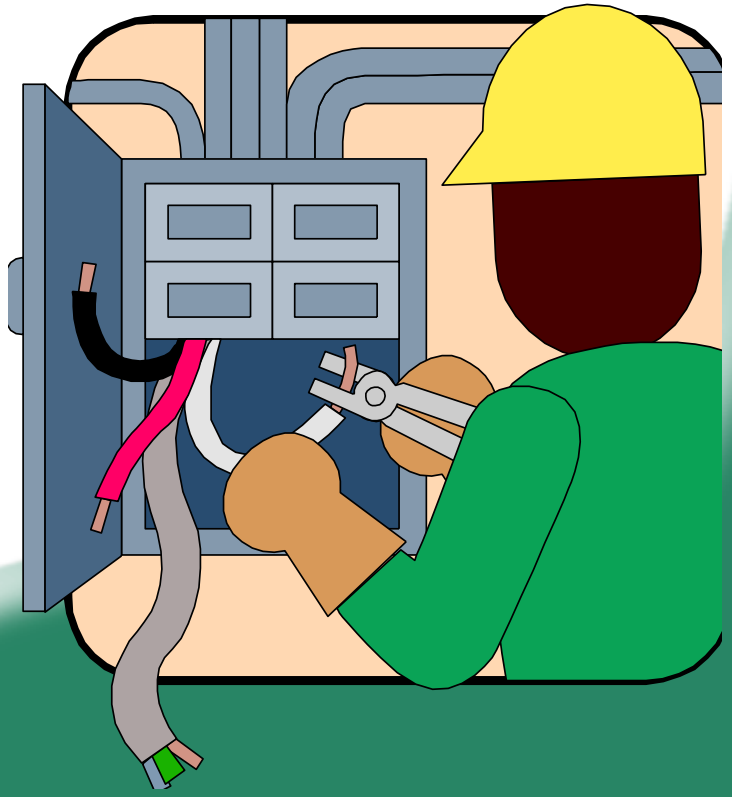
- Harmful Positions:
- Twisting the hand from side to side
- Bending the wrist forward or backward
- Pinching motions
- Pressing/putting force on the palm of the hand.

•RISK FACTORS (CONT'D):

- Excessive Force from gripping, rotating , pinching or leaning on the hand.
- Vibration from power tools.
- Frequent, repetitive motions.

Work safely:

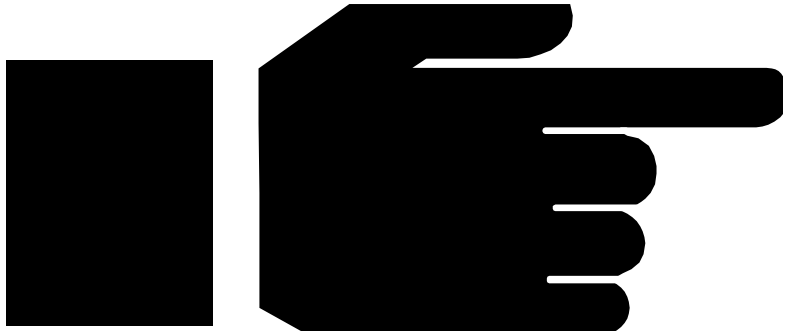
- Use your whole hand as much as possible when grasping objects.
- Position the work within easy reach to avoid bending the wrists.
- Wear gloves or use vibration dampening devices when required.



Use the best tools for the job:

- Handles or levers should extend the full length of your hand to avoid pressure on your palm.
- Choose in-line or pistol-grip tools, depending on the position of the work.
- Single-handled tools, levers and bars should have a grip diameter that comfortably fits in your hand (1.25 to 2”). Pliers or cutters should range between 2.5 and 3”to comfortably fit your hand Proper grip size reduces force during use.
- Textured or cushioned handles provide an easier grip.
- Push button power tools have less kickback than trigger start tools.

Think NEUTRAL:



- Avoid twisting your wrist too far on either side.
- Avoid bending your wrist too far up or down.
- Avoid pinch grips on heavy objects.
- Avoid pressure on the palm.

More Information

- If you are uncertain about a lift or have questions about any of this presentation, contact your safety committee or Bill Godkin of CEsafety.
- Remember, don't put yourself or a co-worker at risk. Get or offer assistance with a lift.