Ergonomics and Back Safety
Ergonomics and Back Safety

Ergonomics

• Scientific study of equipment design for the purpose of improving efficiency, comfort and safety
Ergonomics and Back Safety

• Ergonomic risk factors
  – Repetitive, forceful or prolonged exertions of hands
  – Frequent or heavy lifting, pushing, pulling or carrying heavy objects
  – Prolonged awkward postures

• Improper ergonomics can lead to musculoskeletal disorder (MSD)
Ergonomics and Back Safety

To help prevent ergonomics injuries

- Keep body in neutral position
- Change working position throughout the day
- Stretch fingers, hands, arms and torso
- Periodically stand up and walk around
Ergonomics and Back Safety

- Companies must perform hazard assessments to determine ergonomic controls
- Immediate injuries to the back can be caused by tearing or straining ligaments
- Minor, repeated damage over time can be as dangerous on your spine as one acute injury
Ergonomics and Back Safety

• Back problems account for a large percentage of injuries to workers
• Back injuries cause serious problems
  – Highest loss area in worker’s compensation claims
  – Leading cause of disability in workers
  – Health problems affecting quality of worker’s life
Common Causes of Back Injuries

Usually the result of several combined risk factors
• Lifting items that are too heavy
• Repetitive or forceful exertions
• Stretching and lifting
• Lifting and carrying a bulky load
• Twisting at the waist and lifting
• Bad posture
• Reaching above mid chest
• Working or sitting for long periods
• Slips, trips and falls

Improper lifting is one of the most common causes of back problems.
Common Causes of Back Injuries

Stress occurs when you

- Bend at the waist
- Lift a heavy object
- Sit leaning forward
- Have a spine degenerating disease
Common Causes of Back Injuries

- Bending at the waist can add ten times the amount of force to the spine.
- When you add in the 105 lbs. of the average upper torso, lifting a 10 lb. object actually puts 1,150 lbs. of pressure on your lower back.
Common Causes of Back Injuries

• If you were 25 lbs. overweight, the extra weight increases your upper torso to 130 lbs.

• That would add an additional 250 lbs. of pressure on your back, making it 1,400 lbs. of pressure every time you bend over.
Symptoms

• If back injury is suspected, immediately report the injury and have the injury examined
• Signs and symptoms of back injuries
  – Pain
  – Numbness
  – Reduced range of motion
  – Stiffness
  – Weakness
  – Popping or grinding in the joints
  – Muscle spasms due to stress or tension
Identification of Job Hazards

• It may be possible to redesign a job to make it less likely to cause injury
• Companies should determine controls and procedures to reduce the number of back injuries
• If you have suggestions, share information with supervisor
Prevention

Engineering controls

• Mechanical lifting aids
• Adjustable worktables
• Storing materials
• Designing lighter materials
Prevention

• Administrative controls
  – Training on ergonomic principles
  – Placing the right person for the job
  – Issuing changes

• PPE
  – Not as effective at preventing back injuries as engineering controls
Prevention

Reduce back injuries by

• Staying in good shape
• Eliminating negative lifestyles by reducing stress and tension
• Asking for help
• Releasing stress to back by moving and stretching
• Transferring weight for support
• Practicing lumbar stabilization
• Avoiding extreme force when using tools
• Pushing rather than pulling loads
Prevention

• Proper lifting techniques
  – Position yourself close to the load
  – Spread feet a shoulder’s width apart
  – Keep knees bent, back straight
  – Tighten the stomach muscles
  – Lift using the large muscles of the legs
  – Avoid twisting your body

• Keep object within safe lifting zone
  – Between waist and shoulders