Introduction

- Back injuries are some of the most common and costly injuries in the workplace.
- An estimated 80% of Americans will suffer a back injury at some time in their life.
- Low back pain most commonly occurs in people aged 30 to 50 years old.
- Back injuries cause loss of work and cost billions of dollars per year.
Back Injuries are Caused by:

- Improper Lifting
- Faulty posture
- Overuse of certain muscles and joints
- Stress and fatigue
- Poor general health, lack of physical fitness, loss of suppleness
- Trauma
Lifting and Carrying

- Check the path of travel or destination of the load to make sure it is clear
- Clear the path before picking up the load
- One of the most frequent causes of back injuries is falling while carrying a load
Warm-up Exercises

• Prior to lifting, you should warm up your muscles with a couple of stretches – like hamstring stretch…
Warm-up Exercises

• Or side-to-side stretching
Test Weight of Load

• Prior to lifting or moving an object, test the weight of the load to make sure it can be moved safely.
Test Weight of Load

- Test the weight by lifting a corner of the object. If it is too heavy or if the object is an odd shape, STOP!
Ask for Help

• If an item is too heavy or awkward to carry, request assistance from a co-worker.
Awkward Loads

- It is better to drop a heavy or awkward load rather than risk an injury by jerking or moving incorrectly.
• Push instead of pull heavy objects whenever possible

(This puts less strain on the back)
• Keep the lower back in its normal, “arched” position while lifting (With back arched, forces are more evenly distributed on the support structures)
• Bring the load as close to the body as possible and no more than waist high. *(The closer to your spine, the less force it exerts on your back.)*
Lifting

- Bend at the knees or hips, not at the waist.
- Point your toes out.
Lifting

• Keep the head and shoulders up as the lifting motion begins (*This helps to keep the arch in the lower back*)
Lifting

- Tighten the stomach muscles as the lift begins.
- Keep your weight centered over your feet.
Lifting

• Lift with the legs and stand up slowly, moving in a smooth, even motion
Use the strength of the legs to straighten the knees and hips as the lift is completed. (This decreases the lower back stress)
Lifting

• Tuck your arms and elbows into your side and your chin into your neck.
Lifting and Carrying

• Use a wide, balanced stance with one foot ahead of the other

• A solid base of support reduces the likelihood of slipping and jerking movements
Steps to Prevent Back Injuries

• Avoid twisting motion as you move objects
Steps to Prevent Back Injuries:

- Do not reach for things above your head or out of reach
- Heavy items should be kept between 30-50” from floor to eliminate need for reaching
Steps to Prevent Back Injuries

- When stacking items, keep stack below shoulders and above the knees
Lifting and Carrying

- Break a large load into several smaller ones, whenever possible
Carrying

- Take small steps
- Move the feet (pivot) if a direction change is necessary.

(This eliminates the need to twist at the waist, thus reducing the stress on the supporting structures of the back)
Carrying

- Turn correctly -- slow and easy. Lead with foot pointing in direction you want to go.
- Never try to change grips while carrying heavy load. *(If load is slipping, set it down and get a better grip)*
Lowering Load

- Place load on edge of surface and slide it back
Lowering Load

- Put down as carefully as you picked it up -- squat straight down using only leg muscles
- Lower load slowly, bending at the knees
Lowering Load

- Make sure fingers don’t get caught under the load
Use an Assistive Device Whenever Possible

- Use both hands to control the hand-truck or pushcart.
- Use tie-down straps, if necessary, to secure the load.
Use an Assistive Device Whenever Possible

Stay close to the load, try not to lean over, and keep your back straight or slightly arched.
• “Spring-suspended” bin” can be used for loading and unloading cartons
Shoveling, Raking and Mopping

- D-Grip handle provides a hand placement position that is slightly angled to the mounting surface.
- Substantially reduces back pain, fatigue, blisters and other repetitive stress injuries.
Back Exercises – Half Sit-ups

• Lie down on your back with your knees bent.
• Put your arms on your chest.
• Raise your body 6 - 8 inches off the floor.
• Hold for 5 seconds, then relax.
• Repeat 6 times.
Back Exercises – Knee Raise

- Lie down on your back with your knees bent.
- Raise one knee at a time to your chest, and hold it for 30 seconds.
- Lower your foot to the floor, and raise the other knee.
- Repeat this exercise 6 times for each leg.
Back Exercises -- Partial Squat

• Starting at a standing position, balance yourself by holding onto a stationary object, such as the back of a chair.

• Bend your knees, and squat down about halfway to the floor. Hold this position for several seconds.

• Stand up. Repeat 6 times.
Diagonal Lift

- Grip the top outside and bottom inside corners (this is the “diagonal lift”)

![Man lifting a box](image)
Tripod Lift

- One knee on the floor for balance.
“Golfer’s Lift”

- Face the object.
- Brace one hand on your knee or work surface to help offset the weight of the load and help in stabilizing your body.
- Tighten your stomach muscles and bend at the hip, not at the waist, lifting the opposite leg up and out behind you.
- Pick up the object, return to a standing position.
Power Lift

- Most powerful lift
- Item is position between 30-50” from floor
- Muscles are slightly contracted providing most strength
One-Arm Loads

- Reach for the load
  - Bend at the knees & waist & keep back straight
- Grasp load firmly
- Lift with legs using free arm to balance
- Keep shoulders level
- Switch hands frequently
Awkward Objects

- Stand over one corner of load with feet apart
- Grab bottom inside & top outside corners
- Bend knees and lift keeping the same grip
Lowering from a High Place

- Test load weight by pushing on it. Check whether the load will shift when you lift it.
Lowering from a High Place

• Lighten load, if possible
• Stand on something sturdy with one foot in front of the other
• Get help if load is awkward or heavy
Lowering from a High Place

- Stand as close as possible to the load
- Grasp object firmly, sliding it down your body
- Get help, if necessary
What’s Wrong in This Picture?

With knees between the body and the box, the box is being lifted too far out from the body.
What’s Wrong in This Picture?

- A 10 pound box held close to the body exerts 10 pounds of pressure on the lower back. That same 10 pound box held out from the body exerts 100 pounds of pressure on the lower back.
What’s Wrong in This Picture?

- Ladder is too heavy and awkward to carry alone – request assistance from co-worker