Preventing Back Injury

The back protects the spinal cord nerves and anchors the legs, hips, ribs, arms and head. When there are back problems, these connected areas can be affected as well. The opposite is also true; issues with connected parts can stress the back

How the Back Works
- **Spinal nerves** carry motor, sensory and autonomic signals between the spinal cord and the body
- The **spinal cord** extends from the brain. It has three major functions:
    - Transporting motor information
    - Conducting sensory information
    - Coordinating certain reflexes
- The spine has interlocking bones called **vertebrae** that are held together by the muscles of the back and abdomen, often called core muscles
- Vertebrae are separated by **discs**, which act as cushions

Types of Injuries
Common injuries include:
- Strain and fatigue
- Fractured vertebrae
- Spinal cord nerve injury
- Pressure on nerves
- Tears in discs
- Disc fractures and ruptures
- Weakness

Risk Factors
Conditions that can increase the chance of an injury:
- Aging
- Poor physical fitness
- Body weight
- Strength
- Flexibility
- Physical stress
- Bad posture

Aging
- Degeneration of the spine
- Inappropriate alignment
- Loss of strength

Physical Condition
- Strong and flexible muscles and joints reduce your risk of injury
- Weak ligaments and muscles may cause discs to be susceptible to injury
- Strong core muscles will add extra support when handling objects
- Excess body weight puts extra strain on your back
- Excess body weight can cause damage because the back operates on a 10:1 ratio

Physical Stress
- Unwanted physical strain or pressure put on the body
- Stress may keep our muscles in a state of tension or contraction
- Stressed muscles are more susceptible to strains, sprains and spasms

Bad Posture
Posture is the balance and alignment of your body.
- "S" or curved shape is the natural position of the spine
- Improper posture leads to musculoskeletal problems

Causes of Injuries
Identifying and understanding the following causes can be your best defense in preventing injury.

Overexertion
- You overexert your back when you strain or fatigue it
- Overexertion can compromise posture, lifting technique and balance - all of which can lead to injuries
- Limits for overexertion depend on the individual's risk factors
- Signs of overexertion include spasms and pain
- Don't ignore the physical limitations of the body

Improper Lifting
- Bending over
  - Using only your back muscles strains the back
- Unnatural body position, like reaching above shoulder height
  - Causes tension and overexertion
- Twisting
- Holding objects away from the body's center
- As the object moves farther from the body, the applied weight of the object and necessary exertion increase

Poor Environmental Conditions
Environmental conditions are the physical surroundings and situations. Potential hazards include:
- Path of travel
  - Wet floors
  - Uneven surfaces
- Arrangement of workplace
  - Reaching above shoulders or below knees increases risk of injury

Prevention
The following can prevent a back injury from occurring.

Proper Lifting Techniques
1. Assess the situation: What are you lifting and from where? Is your path clear? Are you ready? 2. Test the weight of the object; if it's too heavy, get help or use a mechanical device
3. Bend your knees. Get a good grip. Tighten the muscles in your arms, legs and abdomen.
4. Look straight ahead. Hug the object. Turn with your feet; don't twist at the waist.

When you lift bagged items, crouch over them with one leg braced and another kneeling. Lean the bag onto the kneeling leg, then slide it up to the braced leg. As you stand, keep the bag close to your body.

Carrying

When you carry items:
- Wear appropriate gloves (gloves with rubber dots may improve grip while loose/thick gloves may make it hard to grip)
- Use handles, grips and handholds, if they are available
- If you use one hand, alternate between left and right
- Pad your shoulders if you carry loads on them

Proper Equipment
- Adjust your workplace (follow principles of good ergonomics)
- Wear comfortable shoes with slip-resistant heels and soles
- Use mechanical aids when lifting heavy or bulky objects
- Get help from a co-worker

Personal Prevention Strategies
- Maintain good posture
  - Don't slump, slouch or hunch over
- Outside work:
  - Exercise
- Sleeping:
  - Use a firm mattress
  - If you sleep on your side, keep knees slightly bent with a pillow between them
  - If you sleep on your back, keep a pillow under your knees
  - Avoid sleeping on your stomach with your head resting on a stack of pillows
- Reduce stress
- Know the facts about back injuries
  - Injuries are cumulative
  - Don't ignore minor back pain
- Before you work and throughout your day, make time to stretch to reduce muscle fatigue and maintain flexibility

NOTE: Stretching should provide muscle relief. If you feel more than a brief twinge of discomfort, or if you feel numbness or tingling, you may have an injury. Do not force movement. Instead, stop and consult a physician.

Strengthening the Back
- Exercises that stretch and strengthen the muscles of your spine can help prevent back problems
- If your back and abdominal muscles are strong, you can maintain good posture and keep your spine in its correct, most natural position
- Do exercises even if you've worked a long day

Injury Response

Most minor strains will go away in time if you stay limber and active. If you suffer an injury or if your back pain includes numbness or tingling anywhere on your body, you should see a medical professional. Remember to:
- Report the injury to your supervisor immediately
- Follow workplace policies regarding medical care and/or treatment
- Follow medical advice about medications, treatment and physical activities

Lifting Technique Checklist

Ask a supervisor or co-worker to observe your lifting technique to identify what you are doing right and what you can improve upon using the checklist below.

> **IMPORTANT**: These lifting techniques are only for lightweight loads that can easily fit between your knees. Ideally, you should lift from a position higher than the floor.

Boxed Items

Yes	No	Observation
☐	☐	Pre-lift stretching complete
☐	☐	Bent the knees, not the back
☐	☐	Tested the load before lifting
☐	☐	Good grip
☐	☐	Lifted close to the body
☐	☐	Pushed up with legs
☐	☐	Stood, keeping the bag close to the body
☐	☐	Looked straight ahead while moving
☐	☐	Turned with feet, not waist

Bagged Items

Yes	No	
☐	☐	Pre-lift stretching complete
☐	☐	Crouched over the bag with one leg braced and another kneeling
☐	☐	Tested the load before lifting
☐	☐	Good grip
☐	☐	Slid the bag onto kneeling leg and then over to the braced leg
☐	☐	Stood, keeping the bag close to the body
☐	☐	Looked straight ahead while moving
☐	☐	Turned with feet, not waist

Comments