



# WORK-RELATED INJURIES: *A NATIONAL EPIDEMIC!*



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- Let's examine the facts about some of these common mishaps and what can be done to relieve their often painful consequences.



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- This will alter the normal pattern of muscle contraction leading to sudden, violent and uncontrolled muscle contraction. If left untreated, this leads to shortening of some muscle groups of the back and weakening of others.
- The result of these long-term changes in muscle is that spinal movement becomes grossly restricted and painful, a restriction that is learned as well as structural from fibrosis.

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- In muscle the effect of lack of use leads over weeks and months to progressive weakening and scar tissue. Fortunately, this is in most cases reversible, as the patient learns to contract and use the muscles once again. It may take months of hard work to rebuild muscle and eliminate scar tissue and fat between and within muscles.

# Scar Tissue...

- Connective tissue heals through the formation of scar tissue.
- Scar tissue is less elastic, less resilient, less pliable, and less resistant to shear and tensile forces than is the original tissue.
- Scar tissue can decrease motion and flexibility and, therefore, may play a part in altered biomechanics.
- The lack of motion at one level will be compensated for by increased motion at adjacent levels, which in turn will usually result in degenerative disc disease and osteoarthritis some time in the future.

*Foreman, S.M., Croft, A.C.: Whiplash Injuries. The Cervical Acceleration/Deceleration Syndrome. Williams, & Wilkins, Baltimore, 1988. p. 301*

# Injury → Arthritis...

- Trauma may be one of the most common agents in the development of osteoarthritis.

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- The normal human joint simply will not wear out with normal use and under normal loads. Shear force is almost nonexistent, and the coefficient of friction is roughly equal to that of ice on ice.

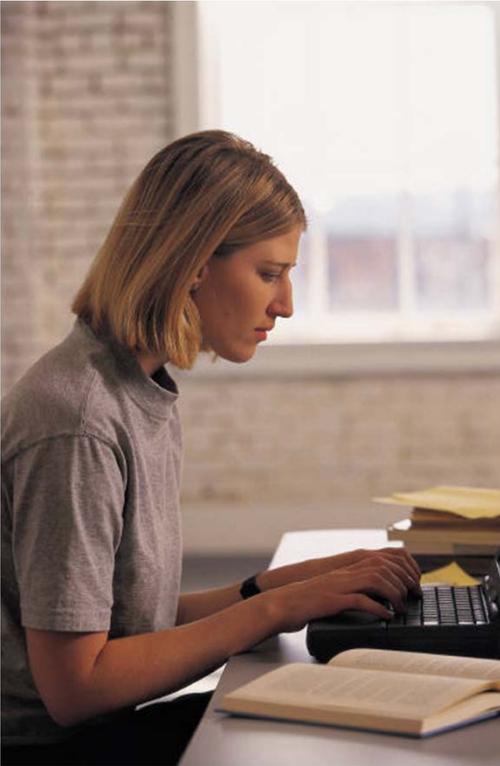
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- In short, this joint is highly efficient and should last at least as long as the rest of the body.

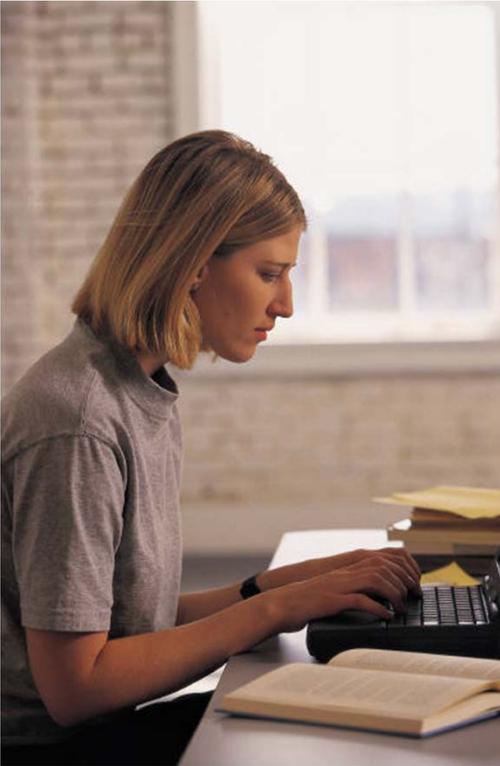
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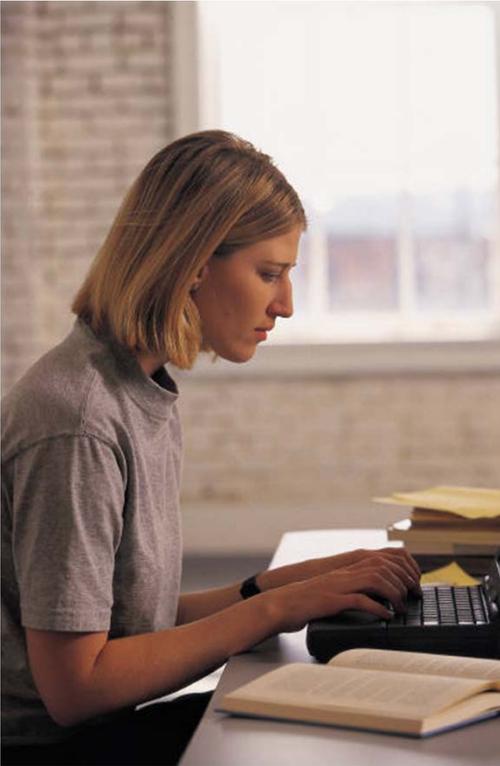
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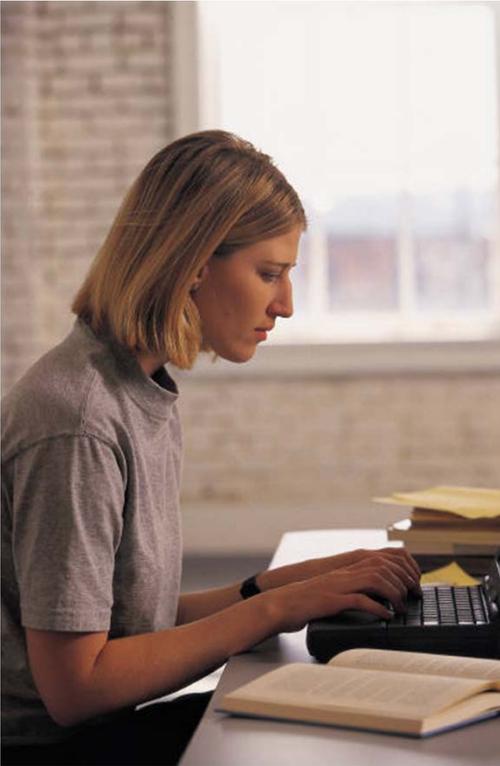
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- The National Institute of Occupational Safety and Health (NIOSH) predicts that more than half of the work force could fall victim to motion injuries in this decade.
- Due to the increasing threat of repetitive-motion injuries, especially those related to video display terminal (VDT) operators, a growing number of states and communities are adopting mandatory guidelines to curb VDT-related injuries.

Is There An Answer?

*Carey Chiropractic, P. A.  
Presents:*

# BACK TALK



Understanding and Preventing Back  
Injuries

# What You Will Learn Today

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- Learn what we can do once we do hurt our backs.
- Own new strategies to prevent injuries.

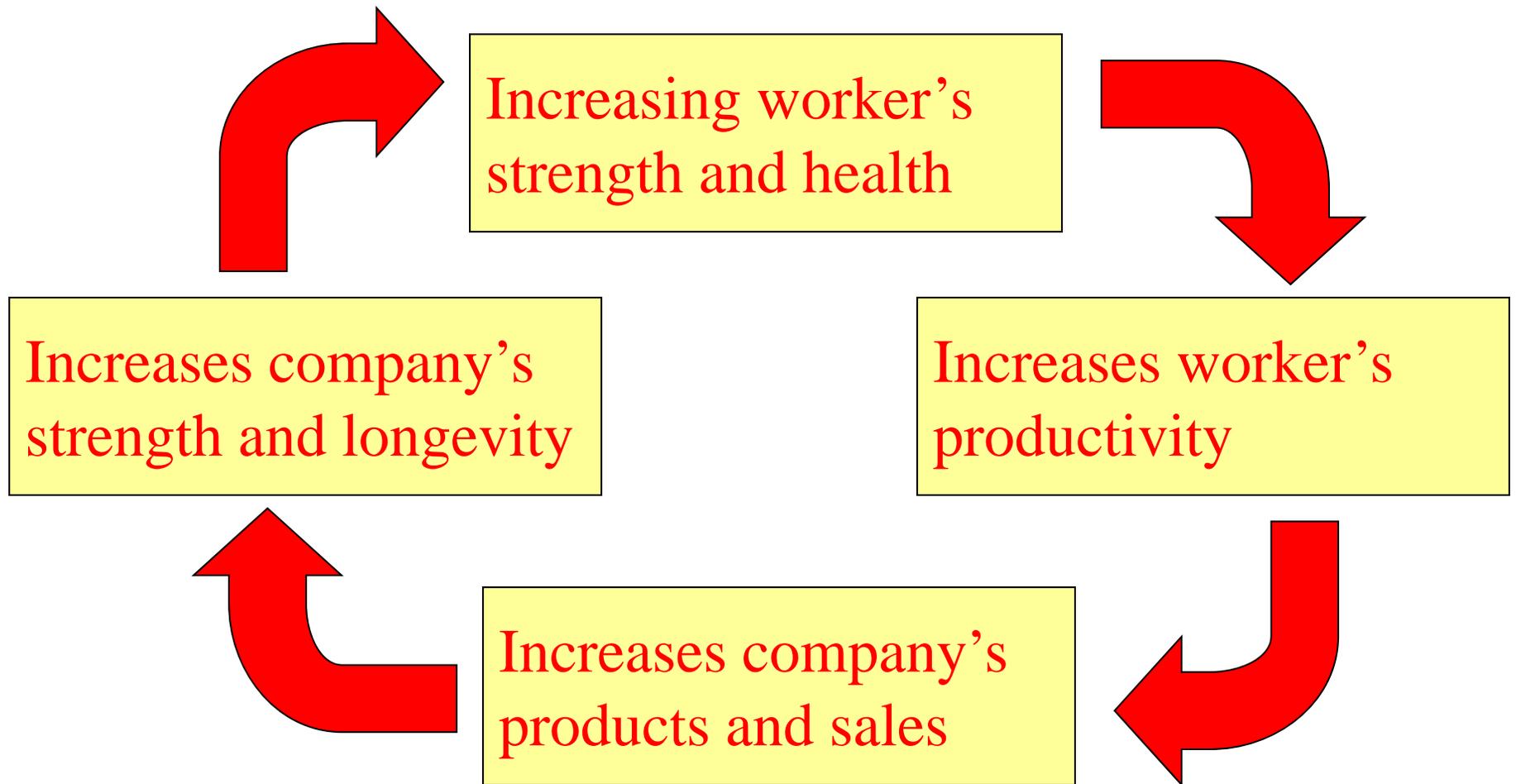
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- It is the leading cause of disability and morbidity in those under age 45

# You Are The Strength



# Is Your Spine Breaking Down?

- Step one: review the history of injuries to your back.

*Distortions of posture are warning signs of spinal breakdowns.*

# Is Your Spine Breaking Down?

- Step one: review the history of injuries to your back
- Step two: posture is the tool to detect weaknesses in your body

*Distortions of posture are warning signs of spinal breakdowns*

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- Lack of spinal exercise past age 12.



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- Motor vehicle accidents: any speed in excess of 5 mph.
- Broken bones.
- Childhood falls.
- Lack of spinal exercise past age 12.
- Slips or falls.



# Prevention Outline

- Lift with your legs, not your back.



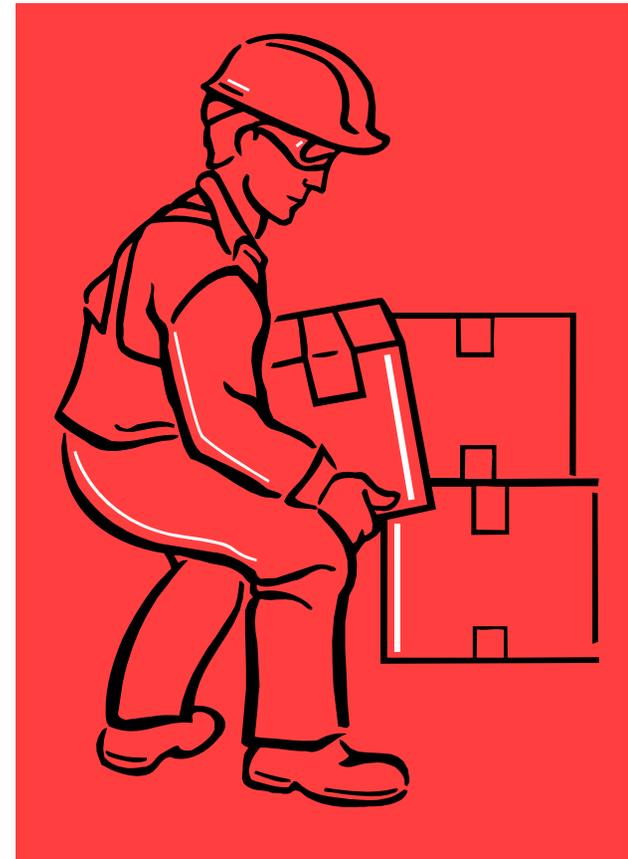
# Prevention Outline

- Lift with your legs, not your back.
- Move your feet when moving objects (no twisting).



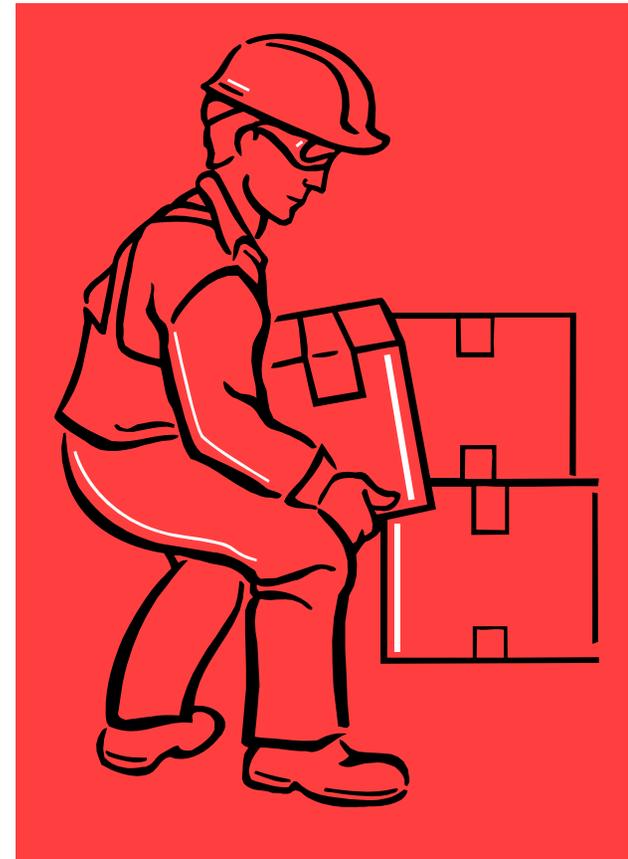
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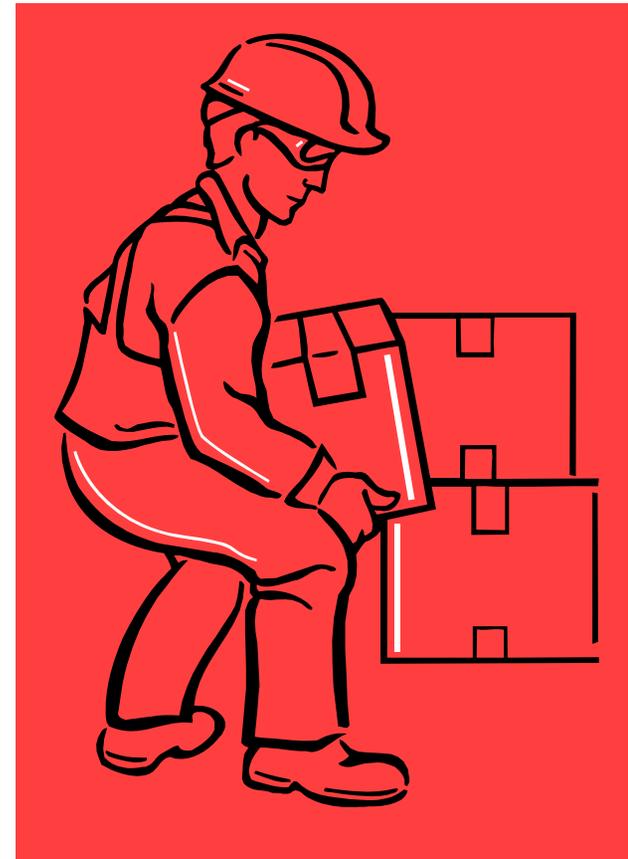
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- Do abdominal breathing.



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- **Goal:** To prevent musculoskeletal disorders by surveying the workplace, take preventive steps, relying on employee input and addressing problems early.
- **Topics:**
  - Musculoskeletal Disorders (MSDs)
  - Recognizing signs and symptoms of MSDs and how to report.
  - Common Causes of MSDs
  - Computer Ergonomics
  - Safe Lifting Principles

# Musculoskeletal Disorders

- Caused by overuse or repetition involving:

- Muscles
- Nerves
- Tendons
- Ligaments
- Joints
- Spinal Disks
- Cartilage

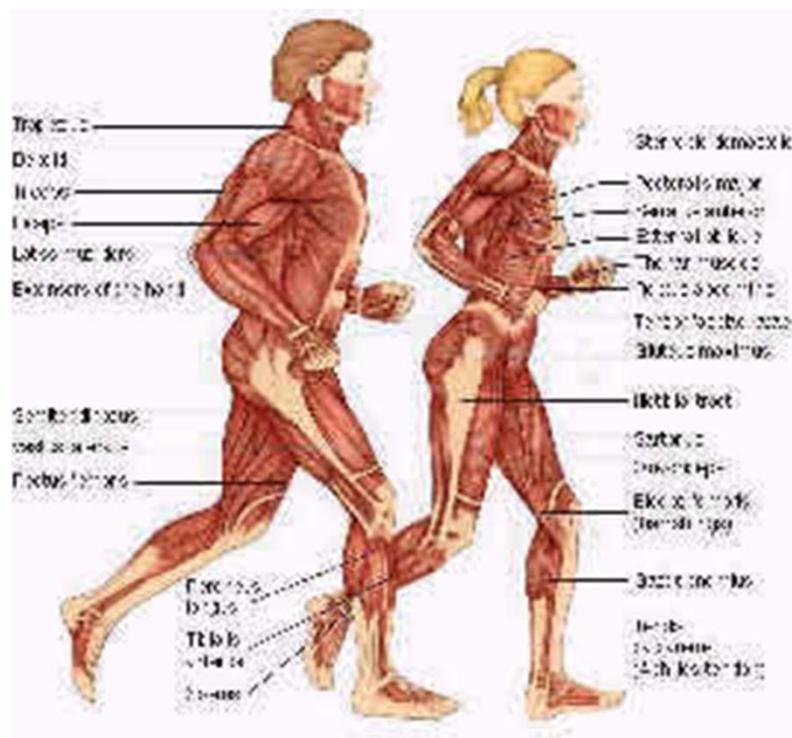


Photo Source: Humanposture.com

# Musculoskeletal Signs & Symptoms

- **Signs that should be reported immediately:**

- Decreased range of motion
- Decreased grip strength
- Loss of function
- Loss of balance
- Deformity
- Swelling
- Cramping
- Redness
- Color loss



Photo Source: <http://www.tandurust.com>

# Musculoskeletal Signs & Symptoms

- **Symptoms that should be reported to your supervisor early:**
  - Muscle Fatigue
  - Aching
  - Burning
  - Numbness
  - Stiffness
  - Tingling



Photo Source: [Naturalbodyguru.com](http://Naturalbodyguru.com)

# Causes of Musculoskeletal Disorders

- Continuous lifting and moving

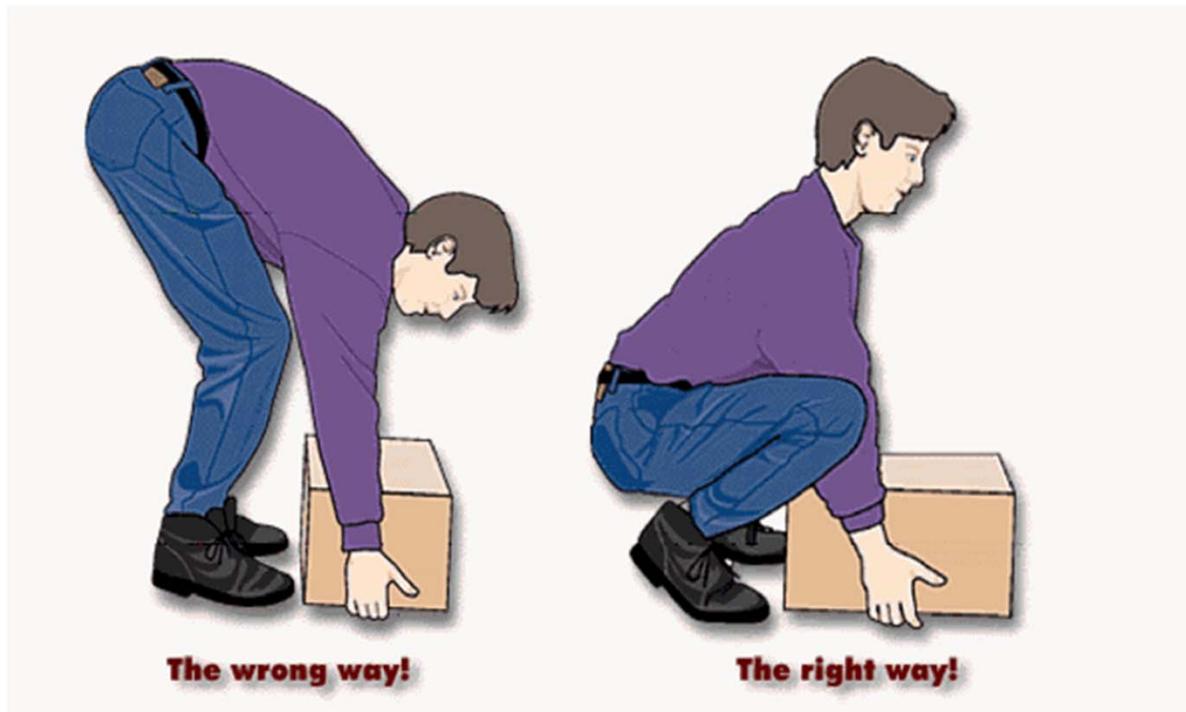


Image Source: Vdu.edu

# Causes of Musculoskeletal Disorders

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*Image Source: Typing.com*

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*Image Source: 2Sand.com*

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*Image Source: Wikipedia.org*

# Causes of Musculoskeletal Disorders

- Continuous lifting and moving
- Repetitive Motion - Mouse Clicks, Typing, Bending
- Contact Stress – Rubbing
- Vibration – Jack hammering, Drilling, Heavy Equipment
- Abnormal Postures – Ladders, Painting



# Musculoskeletal injury facts

- 600,000 MSDs require time off from work.



*Image Source: Ryortho.com*

*Source: US Bureau of Labor Statistics*

# Musculoskeletal Injury Facts

- 600,000 MSDs require time off from work.
- Women suffer more ergonomic injuries due to having jobs requiring more heavy lifting, repetitive tasks and awkward poses
  - 70% of Carpal Tunnel
  - 62% of Tendonitis



*Image Source: Ryortho.com*

*Source: US Bureau of Labor Statistics*

# Musculoskeletal Injury Prevention

- **POSTURE:**

- **NEUTRAL & COMFORTABLE:**

- Wrists straight
    - Shoulders relaxed with elbows close to body
    - head / shoulders & back in vertical alignment
    - Frequent breaks when bent postures can't be avoided

# Musculoskeletal injury prevention



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- Take short, frequent breaks
- Alternate tasks and processes to use different muscle groups

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# Proper Lifting Techniques

- **Step One**
  - Test the load to get an indication as to how heavy the object is.



# Proper Lifting Techniques

- **Step One**

- Test the load to get an indication as to how heavy the object is.



- × **Step Two**

- × Stand close to the load with your feet spread apart about shoulder width, with one foot slightly in front of the other for balance.



# Proper Lifting Techniques

- **Step Three**
  - Squat down bending at the knees (not your waist). Keep your back straight.



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- × **Step Four**

- × Get a firm grasp of the object before beginning the lift.



# Proper Lifting Techniques

- **Step Five**
- Begin slowly lifting with your legs by straightening them. NEVER twist your body during this step.

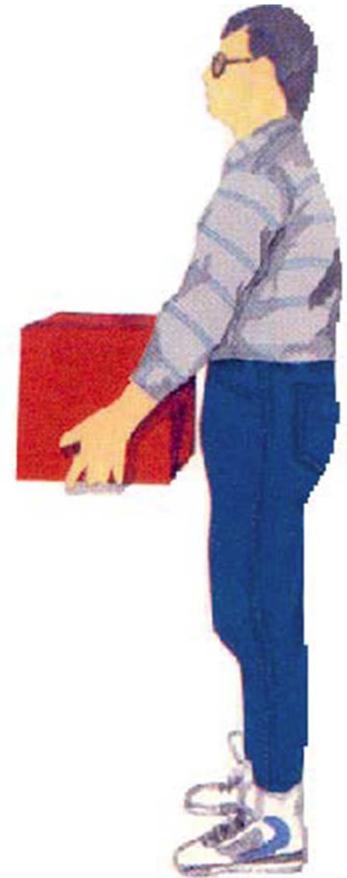


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- **Step Five**
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- × **Step Six**
- × Once the lift is complete, keep the load close to your body to prevent straining the lower back.
- × If you must turn while carrying the load, turn using your feet—not your torso.



# Alternatives to Heavy Lifting

- Ask a co-worker for help.



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- Use a cart - Pushing a load is easier on the back than pulling.
  - Stay close to the load
  - Don't lean forward
  - Use both arms



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- Don't twist your body when lifting or setting an object down.
- Don't reach over an obstacle to lift a load. Move whatever is in the way or go around it.
- Pace yourself to avoid fatigue when doing heavy work for a long period of time.



# Questions to Remember

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- “Can I readjust sitting/standing positions to maintain neutral postures?”
- “Do I use excess force on my job? If so, how can I reduce or eliminate that force?”
- “When lifting is required, am I following the right steps to lift correctly?”
- “Do I have any other ideas to make my work space or tasks more ergonomically comfortable?”