Long Live Your Back!

Tips for keeping your back happy at home and at work

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At the end of this session, you will:

- Understand the what, when, why, and how to protect your back
- Understand the role of posture in back safety
- Learn techniques to safely lift, move, and carry items at work and at home
Why Back Safety?

- Back-friendly posture helps to prevent back pain while performing activities

Neutral Posture Matters!
- May feel fewer aches and pains
- Protect your joints
- Breathe easier
- Feel more energized
- Engage your “core”
- Improved self-perception and confidence
- Look good!
How many times a day do you:

- Sit
- Stand
- Lift something
- Bend over
- Reach above your head
- Twist
- Push
- Pull

Back safety is important at work and at home!
Common Causes of Back Injuries

- Slip, trip, or fall
- Lifting heavy or odd shaped items
- Jerky motions while lifting
- Twisting and/or reaching while lifting
- Working in awkward positions; poor posture
- Static posture (either sitting or standing)
What is Most Injured Area of the Back?

Low Back:
- More compression
- More movement
- Less protection (ribs)

80% of back injuries are at low back region
Low Back Injuries

- According to the Bureau of Labor Statistics:
  - Low back injuries are most common and most costly musculoskeletal disorder (MSD)
  - Over one million American workers suffer from back injuries each year!
  - US spends ~$150B/year due to low back pain
  - Account for 1/5 of workplace injuries

- 54% of Americans with back pain spend majority of day sitting (American Physical Therapy Association)
Anatomy of the Spine

Vertebral Column

- **Cervical (neck)**
  - C1 – C7
- **Thoracic (ribs)**
  - T1 – T12
- **Lumbar**
  - L1 – L5
- **Sacrum**
  - (5 fused)
- **Coccyx**
  - (tailbone)
How Does Posture Effect the Spine?

Effect of Slouching Exercise
Neutral Posture: Ears over shoulders over hips, shoulders relaxed, elbows at sides.
Effect of Posture on the Low Back

Intervertebral disc pressure measured at L3 in various positions:

- Standing: 100
- Bending forward: 150
- Bending over: 220
- Sitting: 140
- Sitting comfortably: 185
What About the Neck?

Displacement of Disc and Joint Compression with Neck Extended

teamgiles.com/2011/05/why-is-good-posture-important/

xraydigitizing.com
Forward Head Posture

Dangers of Forward Head Posture
The Domino Effect

1. The head moves forward shifting the Center of Gravity.
2. To compensate, the upper body drifts backward.
3. To compensate for the upper body shift, the hips tilt forward.

So, the forward head position can be the cause of not only head/neck problems, but also mid-back and low back problems.

For every inch of Forward Head Posture, it can increase the weight of the head on the spine by an additional 10 pounds.

-Kapandji, Physiology of Joints, Vol. 3
Forward Head Posture: Laptops

Tip: Use laptop riser to raise screen to eye height. Use external keyboard/mouse or connect laptop to a monitor.
Forward Head Posture: Smartphones

How texting could damage your spine

<table>
<thead>
<tr>
<th>Force on neck</th>
<th>10-12lb</th>
<th>27lb</th>
<th>40lb</th>
<th>49lb</th>
<th>60lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neck tilt</td>
<td>0 degrees</td>
<td>15 degrees</td>
<td>30 degrees</td>
<td>45 degrees</td>
<td>60 degrees</td>
</tr>
</tbody>
</table>

Forces on the neck increase the more we tilt our heads, causing spine curvature.
Neutral Seated Posture in the Office

To encourage neutral spine positions in your office, check your:
- Chair Adjustments
- Monitor Distance
- Keyboard Placement
- Mouse Placement
- Document placement
- Footrest

Before

After
Neutral Standing Posture

- Center of gravity should pass through the midline
  - Align Ears – Shoulder – Knees
- Feet are shoulder-width apart or slightly staggered
- Avoid leaning to one side
- High-heeled shoes throw the body off balance and increase stress on the low back
Lift, Move and Carry

- Stay Balanced with Stable Base
- Neutral Spine
- Keep Object Close
Balanced Stance

Staggered or Wide Stance
Neutral Spine

- When lifting from the floor, bend at the hips and knees – Keep the spine neutral = maintain the curves!

- Engage your abdominal muscles

- When lifting is not done correctly, the low back lifts the weight of the upper body plus the load

Leverage Zones

- Force on muscles depends on **mass** (weight of object) and **distance** (from the pivot point)
- Keep lift **as close as possible to the body**
- In the **Red Zone**, it can be a **10:1** ratio of force around the pivot point (low back)
  - i.e., Lifting 10 lb bag of groceries would be **100lbs** pressure on your low back!
Tips for Safe Lifting

- Ensure clearance and clear access to the object to be lifted
- Check the weight of the object before lifting
- Get a good grip
- Keep the object close to you
  - Center yourself over the load if possible
- Keep your feet shoulder distance apart and/or staggered
- Keep your spine neutral
  - Bend your knees and hips
- Always turn your feet, never twist your back
- Make smaller loads
- Get help for heavy loads
Staggered Stance Lift

- Legs become more involved in the lift which takes pressure off your back – bend at knees and hips
- Keep the load close to your body
- Engage your abdominal muscles before lifting

Build a Bridge

- One-handed lifts of lightweight items
- Stagger feet with weight on the front foot
- Support upper body weight with hand on the thigh or on a table
- Decreases stress on the lower back
Golfer’s Lift Technique

www.totaltherapy.ca/blog/the-start-of-long-term-back-health/

www.safety.duke.edu/ergonomics/ProtectYourBack.htm
Storage Height Recommendations

- Don’t store heavy or frequently used items above shoulders or below knees (22”–48”)
- Use a step stool if needed
- Avoid forward reaching
Tips for Safe Reaching

- Maintain good balance and a firm base of support
- Stand directly in front of and close to the object, avoid twisting
- Use a stool or ladder for objects above shoulders / below knees
  - Use appropriate stool for task
- **Before** attempting to move the object, be sure that it is not too large or heavy
Tools

- Tools can improve body mechanics and postures
  - Reduce the need for awkward postures
  - Mechanically assist with a task
  - Perform duties safer and more efficiently
Cart

When Carrying an item further than 10 feet, use a cart or dolly.

- Consider the Handle
  - Height
  - Distance from your body (reaching out)

Stool

- When reaching is unavoidable (due to space), use the necessary tools to avoid awkward postures.
Reminders

- Be Aware of your Postures
- Neutral Spine
- Get a Plan Before Moving an Object
- Keep it Close (Leverage)
- Movements should be smooth and controlled, not jerky
- Work/ Store things at a comfortable height to avoid reaching or excessive bending at the waist
- Use tools to reduce reaching / bending
Thank You for Your Time!

QUESTIONS?

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