

Back care and Injury prevention



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Back Injury Facts

- ❑ Back injuries account for nearly 20% of all injuries in the workplace
- ❑ 8 out of 10 Americans will suffer a back injury at sometime in their life
- ❑ Back injuries increase with age, fitness level and weight

Why Worry ?

- Back Injuries are the fastest-growing category of work related injury
 - Up 600% over last 11 years.
- Back injuries account for 93 million lost work days each year. Second only to the common cold.

Injury Data

- 600,000 injuries require time off from work a year.
- Women suffer more back injuries due to:
 - working jobs that requiring heavy lifting, repetitive tasks and awkward postures

Cost of Back Injury

- \$9 billion/ year
- \$29 K / Per workmen's compensation claim.

Common Causes

Reaching and lifting

Trying to lift too much weight

Twisting and bending while lifting

Sitting or standing for prolonged periods

Carrying awkward objects

Working in awkward positions

Back pain Myths

- **Myth 1. Acute back pain is short term pain**
 - 50% of people suffering with back pain have recurring attack or persistent pain
 - If back pain is left untreated the quality of life and ability to perform activities of daily living significantly decreases

- **Myth 2. Spinal manipulation is the best and most effective treatment for LBP**
 - Creates patient dependency
 - Exercise and activity allows patients to manage their own problems and become independent of therapy or chiropractic care

Back pain Myths

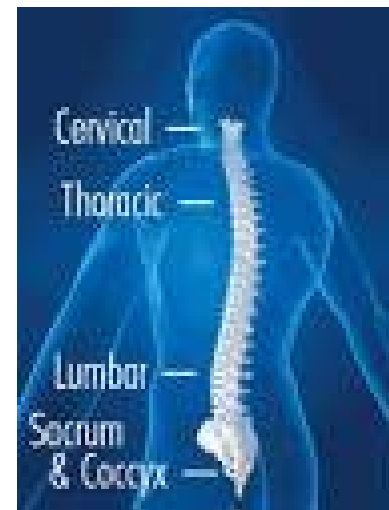
- ❑ **Myth 3. Back pain is caused by inflammation.**
- ❑ Acute back pain results from spraining supporting ligaments around the spine or minor displacement of the intervertebral disc.
- ❑ If managed correctly LBP can resolve within 5 days
- ❑ **Myth 4. Back pain is caused by arthritis or osteoarthritis.**
- ❑ X-ray evidence of spinal degeneration is found in people with back pain as well as in many people who never experience back pain

Back pain Myths

- ❑ **Myth 5. You should take it easy and avoid vigorous activities.**
- ❑ Good advice for the first few days after the onset of LBP, but otherwise it is best to regain your mobility as soon as possible
- ❑ **Myth 6. Back pain is caused by damp, cold weather conditions.**
- ❑ Change in barometric pressure can effect joint pain but there is not evidence that it CAUSES LBP. The cause is usually prior injury or faulty posture

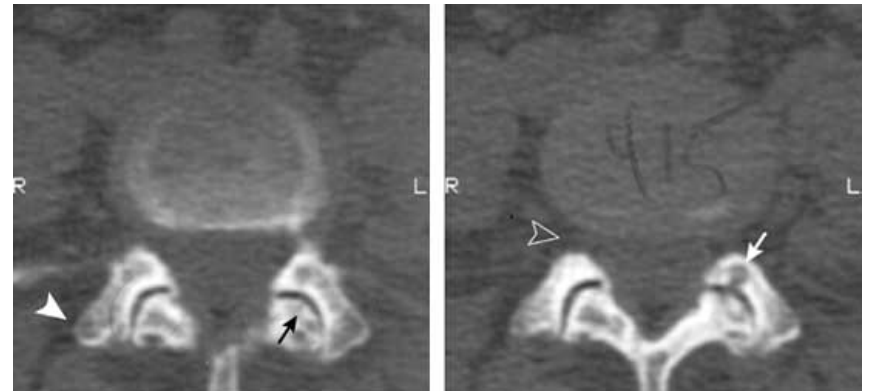
Anatomy

- ❑ 7 cervical (neck) vertebrae
- ❑ 12 thoracic (upper back) vertebrae
- ❑ 5 lumbar (low back) vertebrae
- ❑ Sacrum (tailbone)



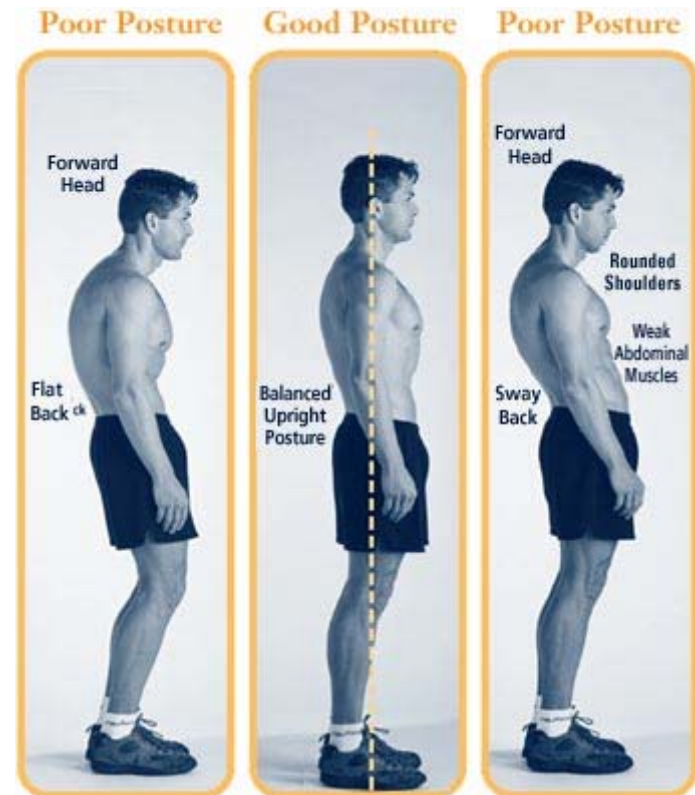
Anatomy

- Facet joints
- Intervertebral disc
- Nerve roots



Natural Posture and Mechanical Pain

- ❑ Revere "S" curve vs. "C" curve
- ❑ Mechanical pain occurs when joints between two bones are placed in a position that overstretches the surrounding ligaments and soft tissue



Mechanical Pain

- Bent finger example
- Caused by:
 - Sustained bad posture
 - Lifting excessive weight
 - Impact from a fall, sport, etc.

Can lead to facet joint problem or disc derangement if left untreated

Symptoms & Signs

Symptoms

- Muscle Fatigue, weakness
- Aching, Burning, Numbness, Tingling in the extremities
- Stiffness

Signs

- Decreased range of motion
- Loss of function
- Loss of balance
- Deformity (Lateral shift, forward flexed position)
- Swelling
- Cramping
- Redness

Risk Factors

- ❑ Poor sitting position
- ❑ Awkward bending position
- ❑ Poor lifting techniques
- ❑ Poor standing position



Poor sitting posture

- ❑ Slouched sitting for prolonged periods will overstretch ligaments and cause mechanical pain
- ❑ If it becomes a habit, slouched sitting will cause distortion of the discs



Risk Control: Sitting Posture

□ NEUTRAL & COMFORTABLE:

- Wrists straight
- Shoulders relaxed with elbows close to body
- head / shoulders & back in vertical alignment
- Use a lumbar roll (order Original McKenzie roll at <http://www.shop.bodymecanicsatl.com/main.sc>)
- Frequent breaks to stand up and stretch backwards



Work Station Tips



12 Tips for an Ergonomic Work Station

- 1 Top of monitor at or below eye level
- 2 Monitor and keyboard centered in front of you
- 3 No glare on screen
- 4 Documents in line with keyboard and monitor
- 5 Negative tilt keyboard support
- 6 Wrists flat and straight
- 7 Arms and elbows close to body
- 8 Change postures often
- 9 Work in a reclined position
- 10 Take frequent short breaks
- 11 Feet flat on floor or footrest
- 12 CPU off desk

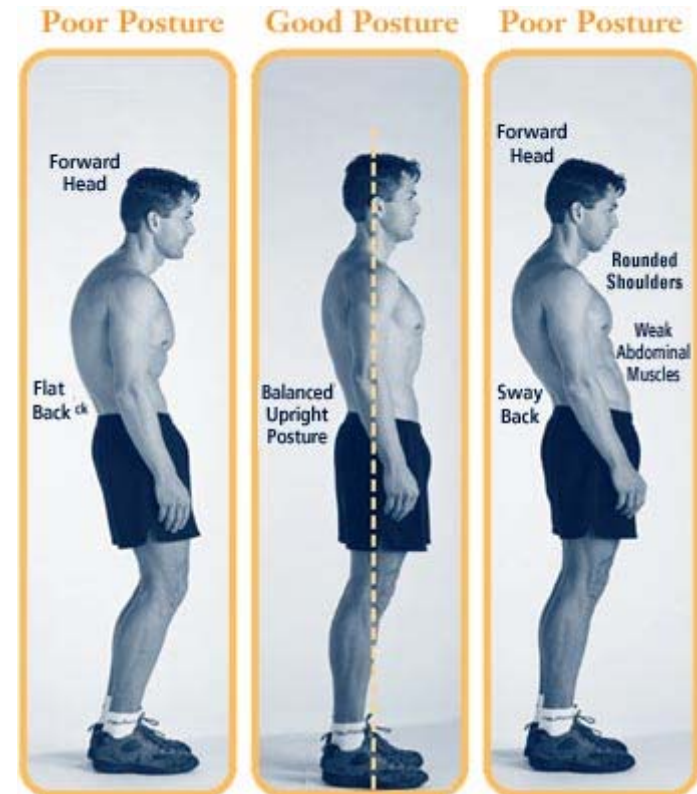
Poor Standing Posture

- ❑ Muscles become relaxed with prolonged standing and permit us to slouch in standing.
- ❑ Slouching during standing can lead to mechanical LBP



Correct Standing Posture

- ❑ Stand tall
- ❑ Lift your chest and pull your shoulders down and back
- ❑ Pull your stomach muscles in.



Working in Stooped Positions

- ❑ Stress on ligaments and disc of the back are considerably higher when stooped
- ❑ While working in these positions you more likely to sustain back injury in the first 4-5 hours of the day
- ❑ Gardening, sweeping, digging, vacuuming, making the bed, etc.



Minimize your risk when participating in prolonged forward bending by:

- ❑ Frequent intervals of standing upright and back bends
- ❑ Special attention during the first 4-5 waking hours

Lifting

- ❑ Lifting with your back rounded has been found to raise the pressure in the disc and cause injury
- ❑ Injuries occur more frequently the first 4-5 waking hours
- ❑ Incorrect lifting technique can cause damage and sudden severe pain



Proper Lifting Technique

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



Proper Lifting Techniques

- ❑ **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.



- **Step Three**

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



Proper Lifting Techniques

- ❑ **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.



Proper Lifting Techniques

- ❑ **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.



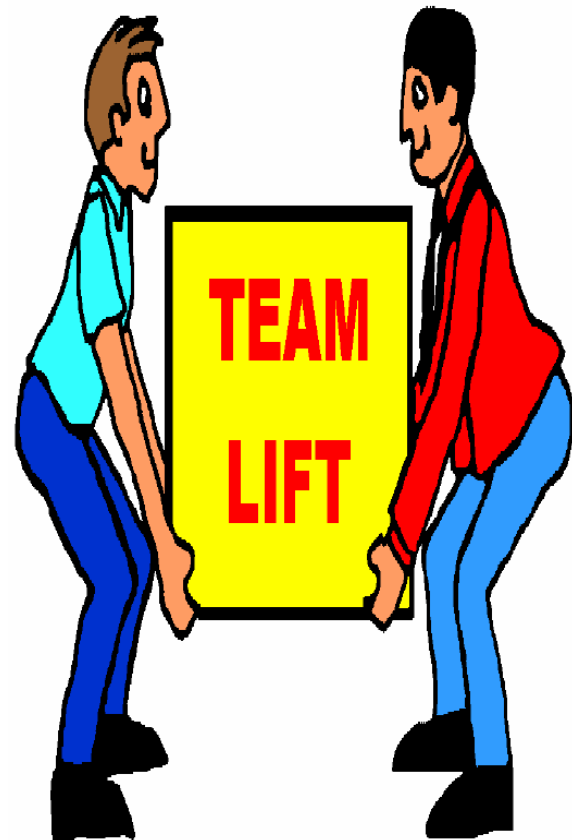
Proper Lifting Techniques

- ❑ **Step Seven**
- ❑ To place the object below the level of your waist, follow the same procedures in reverse order.



Alternatives To Lifting

- ❑ Ask a co-worker for help.
- ❑ For a difficult lifting tasks, keep this options in mind



Alternatives To Lifting: use a cart or dolly

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



Alternatives To Lifting

If you must pull the cart:

- ❑ Face the object squarely, with one foot at least 12 inches in front of the other
- ❑ Keep your back straight
- ❑ Bend your knees slightly and pull in a smooth motion.

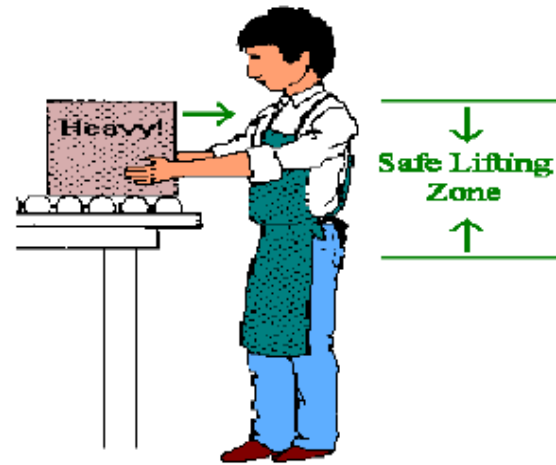


Safety Tips For Lifting

- ❑ Don't lift objects over your head
- ❑ 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.

Back Safety Summary

- ❑ Avoid Lifting and Bending Whenever You Can
- ❑ Use carts, dolly's and other lifting devices
- ❑ Ask for assistance
- ❑ Place objects off of the floor and store in the body's "neutral" zone
- ❑ Practice Safe Lifting Techniques!!



Preventative Measures

- ❑ Eliminate unnecessary tasks / movements by redesigning procedures and workstations
- ❑ Take short, frequent breaks
- ❑ Alternate tasks and processes to use different muscle groups
- ❑ Lumbar roll
- ❑ Exercise to strengthen the back

Exercise and stretching

- ❑ Strong muscles support the spine and prevent injury
- ❑ Flexible muscles allow your spine to operate in the natural range of motion and prevents overuse injuries
- ❑ Should be supervised by a healthcare profession for optimal benefit

Preventative Exercise and stretching

- All exercises should be performed under the supervision of your Physical Therapist or Doctor.

How to know if you are exercising correctly when there is pain

- ❑ Pain centralizes (moves from your leg, buttock or the side, towards the middle of your back)
- ❑ Pain intensity gradually decreases
- ❑ Your range of motion increase

You are exercising incorrectly and in the wrong direction when:

- ❑ Pain moves away from the spine and into the extremities
- ❑ Pain intensity increases and remain worse
- ❑ Your range of motion decrease

Back exercise from prevention of LBP

- ❑ Press up exercise
- ❑ From the prone position
Straighten the elbows and push your top half up as far as pain permits while keeping your pelvis flat.
- ❑ Maintain this position for 2 seconds and then lower yourself back down
- ❑ Repeat 10-15 times 3-4 times a day



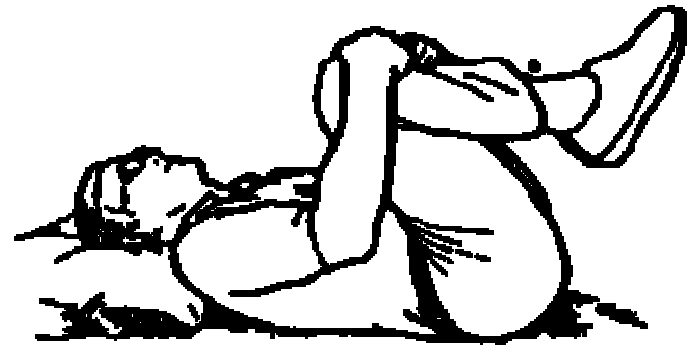
Standing back bends

- ❑ Stand upright with your feet apart and put your hands in the small of your back
- ❑ Bend your torso backwards while keeping your knees straight
- ❑ Hold for 2 seconds and repeat 10-15/ hour



Double knee to chest

- ❑ Lie on your back with the knees bent and your feet flat.
- ❑ Pull both knees to the chest by placing your hands around the knees and hold 10 seconds. Repeat 3 times.
- ❑ Always perform Press up before and after this exercise as it can increase disc pain



Wellness and Fitness Resolutions

- ❑ 60% of Americans don't get the recommend amount of exercise
- ❑ 25% are completely sedentary
- ❑ Obesity as has more than doubled in America over the past 40 years (31% of the population is obese)

Reasons why you don't exercise

- ❑ You hate to exercise
- ❑ You've tried to exercise but you keep quitting
- ❑ You can't afford a gym membership
- ❑ You're not seeing any changes in your body
- ❑ You don't know how to exercise
- ❑ You want to exercise but you have to take care of family

Reasons why you don't exercise

- ❑ You can't seem to stay motivated
- ❑ Exercise hurts
- ❑ You don't have time

Solutions to become fit

- ❑ Find activities that match your lifestyle
- ❑ Slowly progress your workouts and schedule rest days
- ❑ You don't need to join a gym to get fit.
- ❑ Remember it will likely take 12 weeks to see changes in your body
- ❑ Have a trained professional design a fitness program for you based on your needs

Solutions to become fit

- ❑ Change your routine every 4 weeks to avoid boredom.
- ❑ Exercise should not cause pain! Talk to your Doctor or Physical Therapist if your workouts cause pain
- ❑ Plan your workouts so that you have time set aside to get fit.

Gyms

- ❑ Most Weight training machines are not functional. Exception is "Free motion."
- ❑ Most people use too much weight on machines and free weights which leads to injury
- ❑ Personal trainers can become certified for \$250 online or at weekend class. Beware if you have never set foot in a gym.
- ❑ Strength training can be done at home after initial instruction on proper exercise technique
- ❑ Cardio-Walking or running outside is free

Introducing Physical Fitness

- ❑ Step 1. Determine potential barriers that might cause you to stop working out
- ❑ Step 2. Seek the advice of a healthcare professional that is trained to identify potential sources of injury and that can prescribe the proper exercise program
- ❑ Step 3. Set realistic workout goals and stick with your program.
- ❑ Step 4. Have fun and feel better mentally and physically

Thank you

- ❑ For a Complimentary Physical Therapy and Fitness Consult call 404-817-0734 and ask for Claire.
- ❑ Visit us on the web at www.bodymechanicsatl.com



References

- ❑ Croft PR, MacFarlane GJ, Papageorgiou AC, Thomas, Silman AJ. (1998). Outcome of low back pain in general practice: a prospective study. *BMJ* 316. 1356-1359
- ❑ Mckenzie R. (2006). *Treat your own back 8th Edition*. Spinal publication of New Zealand Ltd.
- ❑ EH&S 275-3241 @www.safety.rochester.edu.