



BACK SAFETY & LIFTING

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PMA[®]
COMPANIES

What does a Healthy Back Mean To You!

- **It lets you:**
 - Walk without pain
 - Sit upright
 - Sleep in comfort
 - Stand for longer periods of time
 - Work longer at what you enjoy doing
 - Experience enjoyment everyday of your life

Back Pain Frequency

- **Low back pain affects 80% of adults in the United States population at some point in life.**
- **It is the second most common reason for visits to primary care doctors and for absenteeism from work.**
- **It is estimated to cost the American economy \$50 billion every year.
\$31 million for physician office visits alone.**



HOURS YOU CONTROL

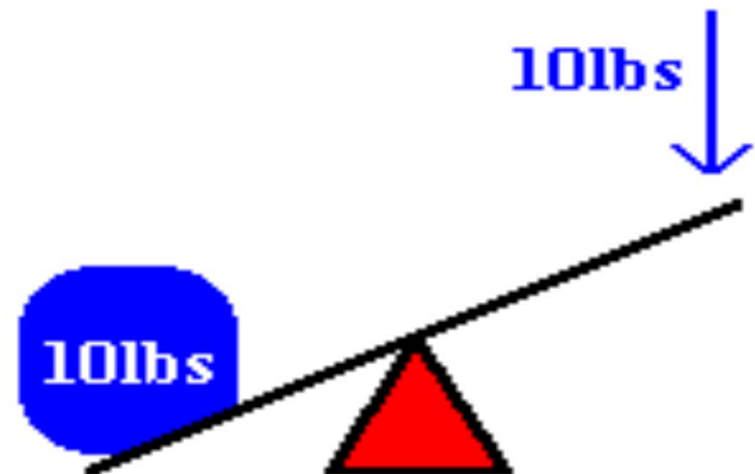
- **Average full time employee works 50 weeks/year for 2,000 hours/year**
- **365 days/year @ 24 hours/day = 8,760 hours**
- **6,760 hours are away from work and under your control**

THE FORCE IS AGAINST YOU...



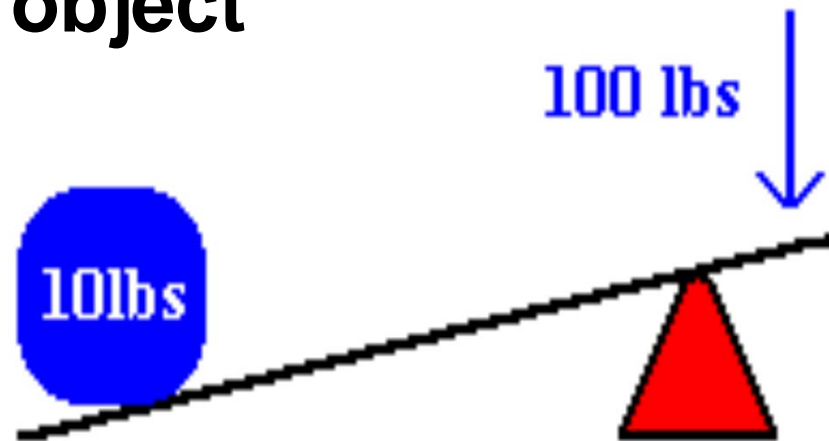
The Forces Involved

- The amount of force you place on your back in lifting may surprise you! Think of your back as a lever. With the fulcrum in the center, it only takes ten pounds of pressure to lift a 10 pound object.



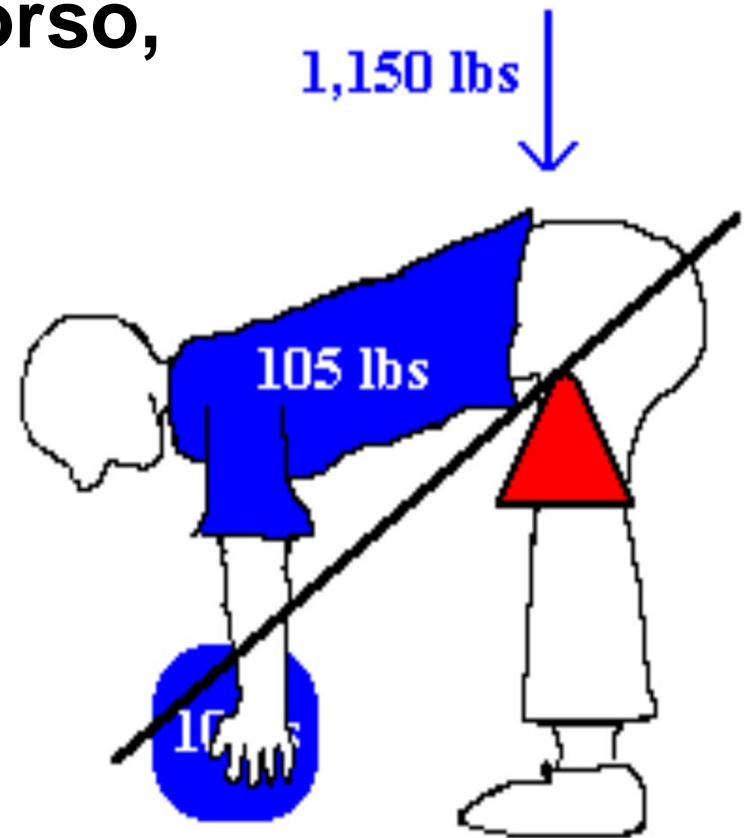
The Forces Involved

- If you shift the fulcrum to one side, it takes much more force to lift the same object. Your waist acts like the fulcrum in a lever system, on a 10:1 ratio. Lifting a 10 pound object puts 100 pounds of pressure on your lower back.



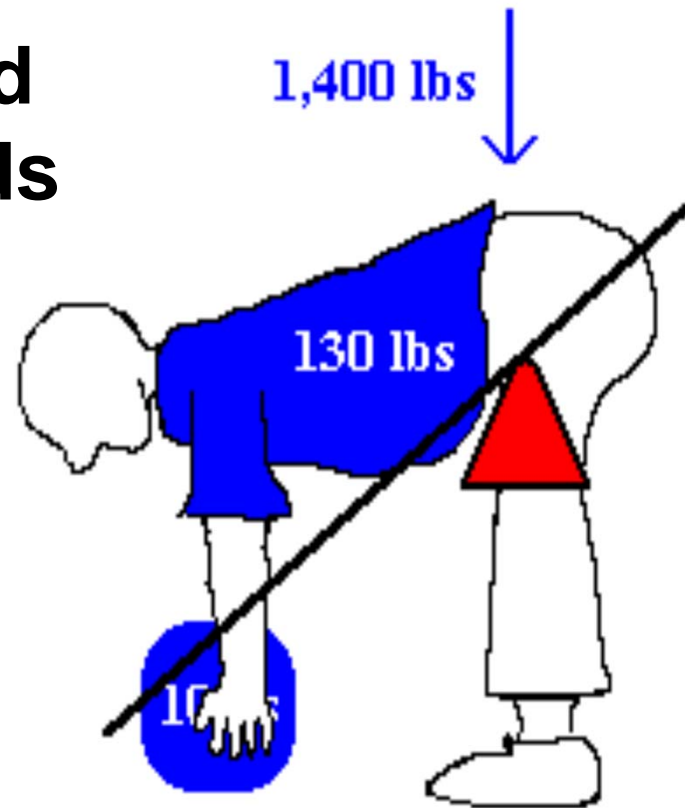
The Forces Involved

- When you add in the 105 pounds of the average human upper torso, you see that lifting a 10 pound object actually puts 1,150 pounds of pressure on the lower back.



The Forces Involved

- If you were 25 pounds overweight, it would add an additional 250 pounds of pressure on your back every time you bend over.



CAUSES OF BACK INJURIES



CAUSES OF MOST BACK PROBLEMS

- **Poor Posture**
- **Faulty Body Mechanics**
- **Stress**
- **Loss of Flexibility**
- **Lack of muscular strength**
- **General Decline in Physical Fitness**
- **Lack of sleep/fatigue**
- **Excessive Weight**



Rules of Proper Body Mechanics

- **1. Test The Load.**
 - Prior to lifting or moving an object, test the weight of the load to make sure it can move safely. Get assistance from proper equipment or co-worker.
- **2. Plan The Move.**
 - Check the path of travel or destination of the load to make sure it is clear. Always clear the path of travel before the lift.
- **3. Use A Wide, Balanced Stance With One Foot Forward.**
 - A solid base of support reduces the likelihood of slipping and jerking movements.

Rules of Proper Body Mechanics

- **4. Keep The Lower Back In A Normal Arched Position.**
 - Bend at the knees and hips. With the back arched, the forces are more evenly distributed over the lumbar area.
- **5. Bring the load as close to the body as possible.**
 - This limits your back from acting as the fulcrum point and reduces the stress.
- **6. Keep The Head And Shoulders Up And Straight When Lifting.**
 - This helps keep the arch in the lower back.

Rules of Proper Body Mechanics

- **7. TIGHTEN THE STOMACH MUSCLES AS THE LIFT BEGINS.**
 - This causes the abdominal cavity to become a weight-bearing structure, thus unloading the spine from most of the weight.
- **8. LIFT WITH THE LEGS AND STAND UP IN A SMOOTH EVEN MOTION.**
 - Using the strength of the legs to straighten the knees and hips as the lift is completed further decreases the lower back stress.
- **9. MOVE THE FEET (pivot) IF A DIRECTION CHANGE IS NECESSARY.**
 - This eliminates the need to twist at the waist, thus significantly reducing the stress on the lower lumbar area.
- **10. COMMUNICATE IF TWO OR MORE ARE MAKING THE LIFT.**
 - This reduces the likelihood of an error, which could result in sudden or jerking movements.

Factors Related to Lifting a Child

- **Weight not evenly distributed**
- **Unpredictable**
- **Unexpected changes in the load demand during lift**
- **Low to the ground**
- **Weak/unable to help with transfer**
- **Resistive behavior**

Factors Related to Lifting a Child

- **Reaching and lifting with the load demand away from the body.**
- **Height for completion of lift.**

Common Causes of Back Injuries

- Anytime you find yourself doing one of these things, you should think:
- **DANGER! My back is at risk!**



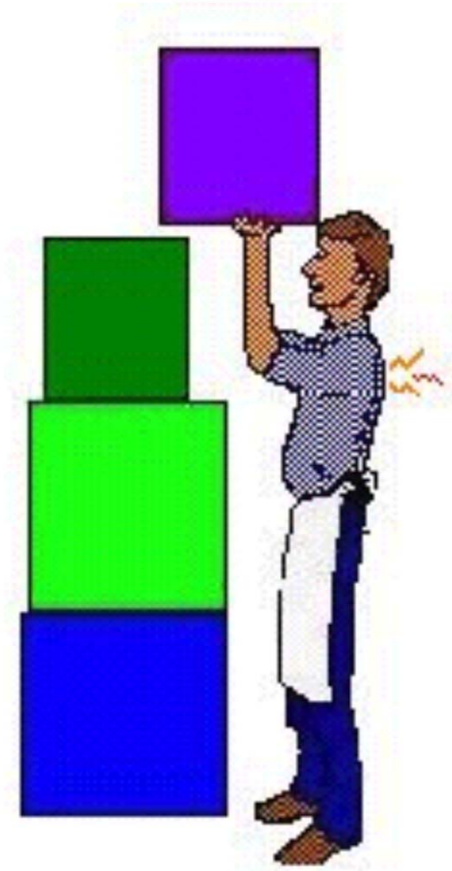
Common Causes of Back Injuries

- **Twisting at the waist while lifting or holding a heavy load .**



Common Causes of Back Injuries

- **Reaching and lifting**
- **Avoid lifting over shoulder height**
- **Avoid reaching across furniture.**



Common Causes of Back Injuries

- **Lifting or carrying objects with awkward or odd shapes**
- **Lifting or carrying with arms reached out**



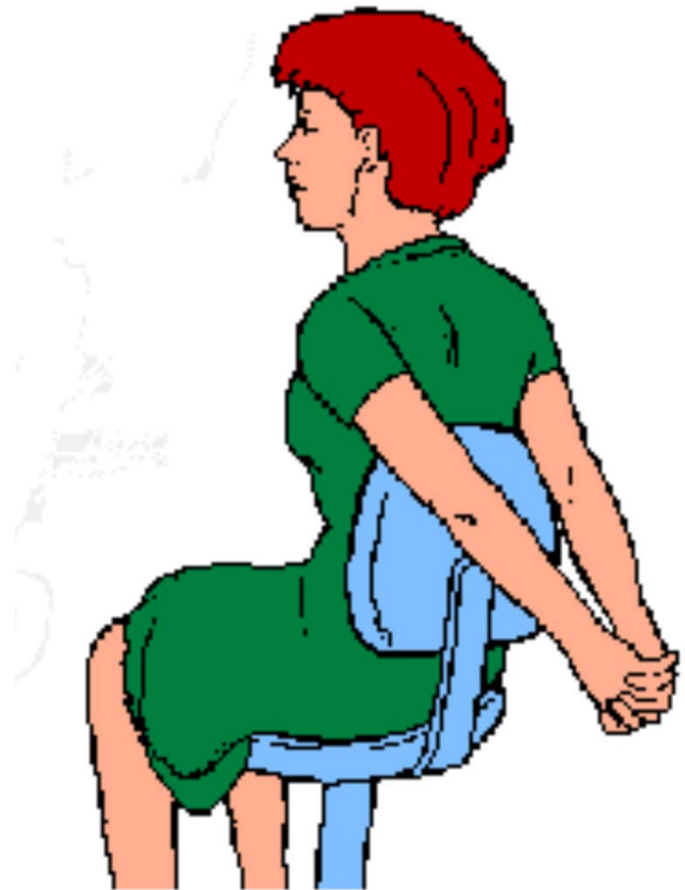
Common Causes of Back Injuries

- **Working in awkward, uncomfortable positions . . .**



Common Causes of Back Injuries

- **Sitting or standing too long in one position . . . Sitting can be very hard on the lower back**



PREVENTION



Prevent Back Injuries

- **Use proper lift procedures . . .**

Follow these steps when lifting

- Take a balanced stance, feet shoulder-width apart
- Squat down to lift, get as close as you can.

Prevent Back Injuries

- **Have a secure hold and keep the weight close to your body.**
- **Lift gradually using your legs, keep load demand close to you, keep back and neck straight.**

Prevent Back Injuries

- **Once standing, change directions by pointing your feet and turn your whole body. Avoid twisting at your waist.**
- **To put down, use these guidelines in reverse.**

Prevent Back Injuries

- **Sit in a low chair or stool while assisting a child who is sitting. (Make sure the chair is weight capacity appropriate.)**
- **Use kneeling or sitting position when working with a child in a low chair or on a floor mat. Avoid bending and twisting.**
- **Get up and down as little as possible by thinking through what is needed first.**

Prevent Back Injuries

- **Get up from the floor by using a half kneeling position and pushing up with both legs.**

HELP YOUR BACK



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Things You Can Do

- **Minimize problems with your back by performing exercises that tone the muscles in your back, hips and thighs.**
- **Before beginning any exercise program, you should check with your doctor.**

Exercise!

- **Exercise regularly, every other day.**
 - Warm up slowly . . . A brisk walk is a good way to warm up
 - Inhale deeply before each repetition of an exercise and exhale when performing each repetition.

**Thank you
Have a Safe Day**



Exercises To Help Your Back

- **Wall slides to strengthen your muscles . . .**
 - Stand with your back against a wall, feet shoulder-width apart.
 - Slide down into a crouch with knees bent to 90 degrees.
 - Count to 5 and slide back up the wall. Repeat 5 times.



Exercises To Help Your Back

- **Leg raises to strengthen back and hip muscles .**
 - Lie on your stomach.
 - Tighten muscles in one leg and raise leg from floor.
 - Hold for count of 10, and return leg to floor.
 - Do the same with your other leg.
 - Repeat five times with each leg.



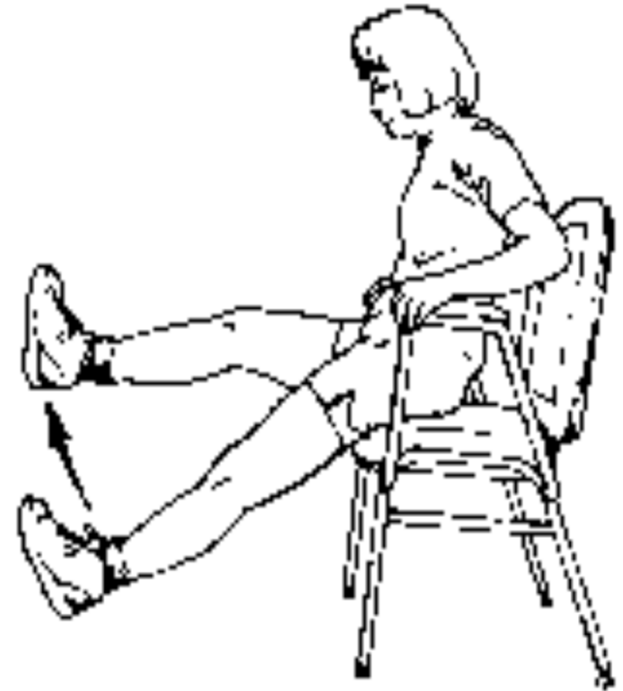
Exercises To Help Your Back

- **Leg raises to strengthen back and hip muscles**
- **Lie on back, arms at your sides. Lift one leg off floor and hold for count of ten. Do the same with the other leg. Repeat 5 times with each leg. If this is too difficult...**
 - keep one knee bent and the foot flat on the floor while raising the other leg



Exercises To Help Your Back

- **Leg raises while seated . . .**
 - Sit upright, legs straight and extended at an angle to floor. Lift one leg waist high.
 - Slowly return to floor.
 - Do the same with the other leg.
- **Repeat 5 times with each leg.**



Exercises To Help Your Back

- **Partial sit-up to strengthen stomach muscles . . .**
 - Lie on back, knees bent and feet flat on floor.
 - Slowly raise head and shoulders off floor and reach both hands toward your knees.
 - Count to 10. Repeat 5 times.



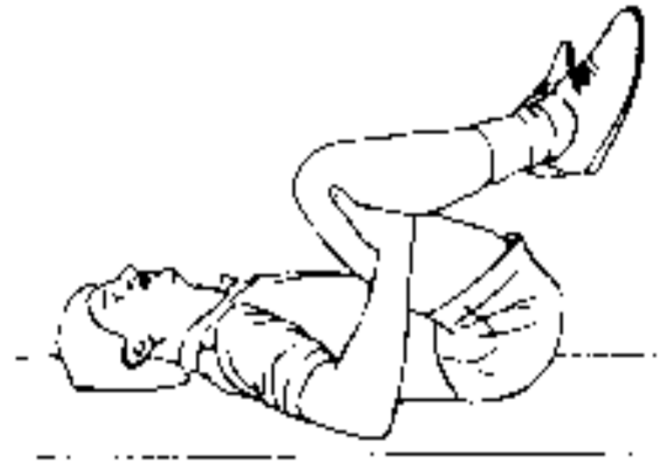
Exercises To Help Your Back

- **Back leg swing to strengthen hip and back muscles**
 - Stand behind chair, hands on chair.
 - Lift one leg back and up, keeping the knee straight. Return slowly.
 - Raise other leg and return.
- **Repeat 5 time with each leg.**



Exercises To Decrease the Strain on Your Back

- **Lie on back, knees bent, feet flat on floor.**
 - Raise knees toward chest.
 - Place hands under knees & pull knees to chest.
 - Do not raise head.
 - Do not straighten legs as you lower them.
- **Start with 5 repetitions, several time a day.**



Exercises To Decrease the Strain on Your Back

- Lie on stomach, hands under shoulders, elbows bent and push up. Raise top half of body as high as possible. Keep hips and legs on floor. Hold for one or two seconds. Repeat 10 times, several times a day.



Exercises To Decrease the Strain on Your Back

- **Stand with feet apart.**
 - Place hands in small of back. Keep knees straight.
 - Bend backwards at waist as far as possible and hold for one or two seconds.

- **Repeat as needed.**



Take care of your back...

- **And it will take care of you**
 - Exercise daily
 - Avoid Heavy Lifting
 - Get Help with heavy or bulky objects
 - If you must bend over, do it properly
 - Avoid twisting at the waist when carrying objects
 - Always watch where you're going