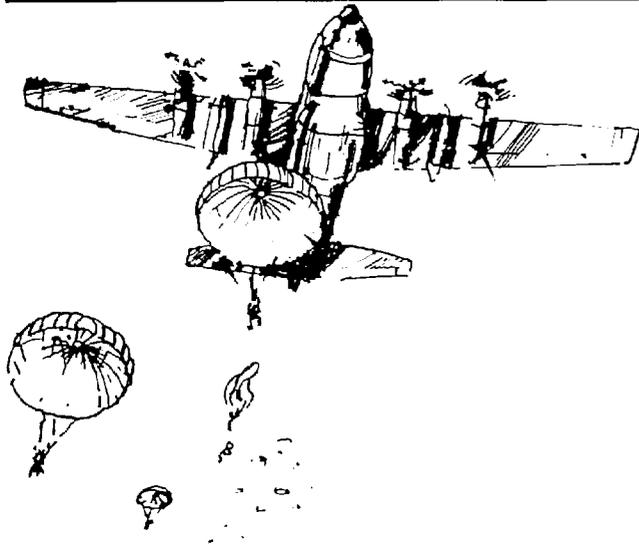
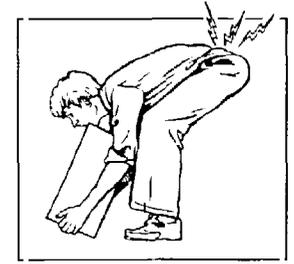


Physical Therapy



Faster, Higher, Stronger,
Healthier

Back Rehabilitation



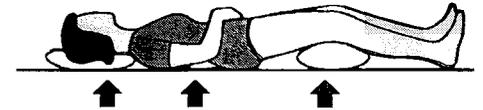
Physical Therapy
Heidelberg / Mannheim / Stuttgart / Hanau

SUBJECT	PAGE
First Aid	2
Flexion Stretching Exercises	3
Extension Stretching Exercises	4
Hip Stretching Exercises	5
Flexion Strengthening Exercises	6-7
Extension Strengthening Exercises	8-9
Standing Posture	10
Sitting Posture	11-12
Lifting and Bending Posture	13
Sleeping Posture	14

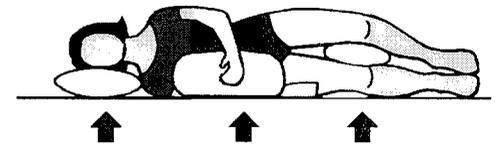


If you are waking up with back pain, there is probably something wrong with your mattress or the position you are sleeping in. The mattress should not be too hard or too soft. If it seems too hard, try placing an egg crate foam on the mattress. If too soft, try placing a board between the mattress and box springs. It is important to maintain the normal alignment of the spine.

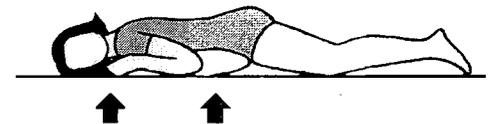
On your back, a pillow at your knees may help decrease stress and pain at the low back. A towel roll or small pillow at the lumbar spine may also help. The pillow under your head shouldn't be too large, enough to support your head in a neutral position.



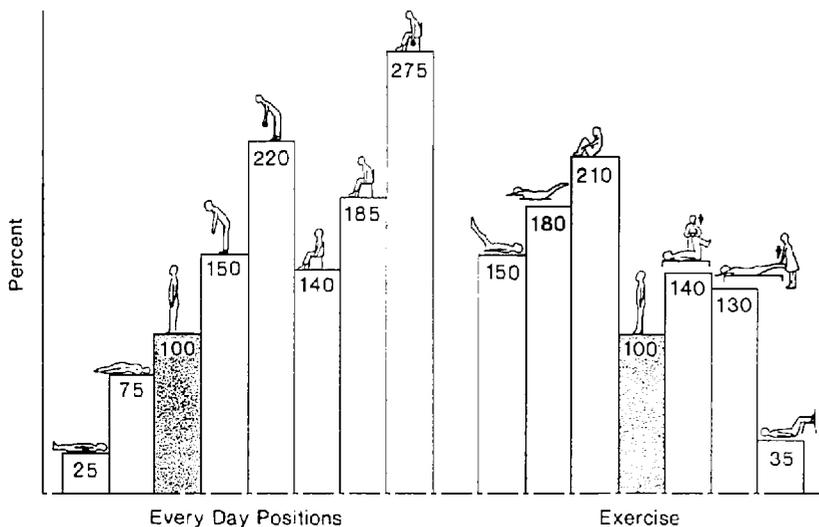
On your side a pillow at your knees and arms may help to keep you from twisting your trunk and back (you can use 2 pillows or one long body pillow). The pillow at your head should be slightly larger, again supporting your head in a neutral position.



Sleeping on the stomach is sometimes helpful with bulging lumbar discs. However, this position is hard on the neck. You may try positioning a pillow 45° at the head, trying to keep the head and neck in a more neutral position. A pillow at the hips may also decrease stress at the low back.



- (1) Avoid heavy lifting while your back is sore and healing.
- (2) Even with light lifting or bending, (such as tying boots), use the legs and maintain the normal alignment of the spine.
- (3) When turning, use your legs and not your trunk or back. This is especially important when lifting and bending.
- (4) Keep objects close, holding light or heavy objects away from your back increases the stress on the low back.
- (5) Bend and lift slowly, no quick or ballistic movements.
- (6) Tightening your stomach muscles during a lift will decrease the stress on your spine.
- (7) Using a back or lifting belt can also help decrease the stress on your spine. BUT - (a) Only use the belt during the lift, immediately after the lift loosen the belt or take it off. (b) You must still use proper lifting and bending technique with a lifting belt.
- (8) If the lift is too heavy or bulky - get help.
- (9) Test the weight of the object before the lift, plan the lift, and plan the carry, clearing your path.
- (10) If you don't have to lift don't - It's better for your back to push, pull, drag or roll the object. When available, use a dolly, wheelbarrow, wagon, wheelchair, etc. to move an object, especially if it's heavy or bulky.



REST - No straight leg bending or lifting, keep your back straight and use your legs to go up and down. Standing, walking and lying down are encouraged; sitting is not. Keep sitting limited to brief periods of 15 minutes. Sitting puts more pressure on your back than standing. When lying down change your position frequently from back, to sides and stomach.

ICE - Use ice packs on the back intermittently throughout the day for 30 minute periods. Ice packs may be made of crushed ice in a plastic bag wrapped in a moist towel, a bag of frozen vegetables/peas wrapped in a moist towel (if laying on your stomach is uncomfortable put a pillow under your hips). Don't fall asleep with the ice on, use an alarm and remove the pack at 30 minutes. Don't use ice with a sports cream on like Ben Gay.

MEDICATIONS - The most useful medications for back pain are anti-inflammatories like Aspirin or Motrin. These should be taken regularly as prescribed by your health care provider. Anti-inflammatories need to be taken regularly for at least two weeks to be effective. Sports creams such as Ben Gay may help to reduce the pain temporarily, but be careful not to overdo activity while the sports cream is on.

EXERCISE - To be pain free all joints need full motion and normal strength. This includes your back and its many joints. Stretch and strengthen daily!

POSTURE - Posture is important all the time but becomes even more important when your back hurts. Good posture is not always easy or natural it needs to be learned and practiced every day!

SMOKING - Smoking has been shown to increase the incidence of back pain. Smoking decreases blood flow to the tissues of the back. Your back will heal faster and stay healthier if you cut down or better yet - stop smoking!

Hold 20-30 seconds, do 3-5 repetitions, 3-5 times per day.
They should not be painful.

1. SINGLE KNEE TO CHEST

Slowly pull one knee up to your chest, keeping the other leg flat.



2. DOUBLE KNEES TO CHEST

Slowly pull one, then the other knee up to your chest and hold. Lower one leg at a time.



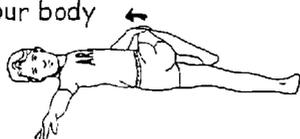
3. LOWER BACK ROLL

With the knees bent slowly rock both knees to one side then the other.



4. LOWER BACK ROTATION

Lying on your back, pull one knee across your body and with the opposite hand. Reach and turn to the opposite direction with the other arm and your head.



5. MIDDLE BACK ROTATION

With one knee bent and crossed over the other, turn toward the bent knee. Relax the back muscles and stretch by pushing and pulling with your arms.



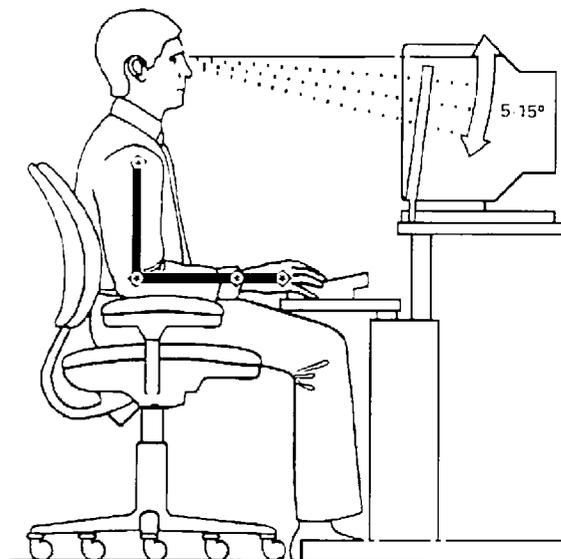
6. KNEELING STRETCH

Rock back on the heels, reach out and stretch with the arms.



7. CHAIR STRETCH

Bring one knee towards the chest and stretch, alternating both sides.



In The Car -

- (1) If your car doesn't support your lumbar curve, use a towel roll, round pillow or commercial lumbar cushion.
- (2) Adjust the seat so you don't have to reach for the steering wheel and there is no more than a 90° bend in your elbow.
- (3) If you can, support your forearms on the side of the door and/or arm rest.
- (4) Keep your shoulders back and head centered over your shoulders (monitor your shoulder and head position with the back of the seat and headrest).
- (5) Take breaks every 45-60 minutes, stopping, getting out of the car and doing some standing extension stretches.

At Home -

- (1) Use pillows or lumbar cushions around the house.
- (2) On a large, soft chair (i.e. couch or recliner) that doesn't have adequate lumbar support, use larger pillows to support your low back.

(1) Elevate your work - monitors should be 5°-15° below your line of sight, (Adjustable monitor holders that clamp onto the desk can be purchased for about forty dollars.), use paper holders to read and type from, (a paper holder that attaches to the monitor can be purchased for about five dollars.), slanted desk tops, that can be bought for under \$100, are good for reading and writing.

(2) The head should be centered over your shoulders.

(3) Your keyboard, work, etc. should be close enough to keep your shoulders back and your elbow bent only to 90°. (An adjustable keyboard drawer can be purchased for about twenty dollars.)

(4) Adjustable arm rests, help to support the weight of the arms and take weight and strain off of the spine.

(5) When using a keyboard the wrist should be neutral, not bent up or down. The meaty portion of the palm should be supported, don't rest on the bony part of the wrist. Take a wrist stretch break every 60 minutes, slowly flexing the wrist up and down.

(6) The chair should have a lumbar curve to support the low back. If it doesn't use a lumbar cushion, towel roll or small pillow.

(7) The chair back should adjust forward and backward for short and long legs.

(8) The chair pedestal should swivel to avoid twisting through the spine.

(9) The chair pedestal should adjust up and down for tall and short people. Your feet should rest flatly on the floor or a stool, the lower leg should support the weight of the thigh, with the thigh parallel to the floor, or the knee slightly higher than the hip joint.

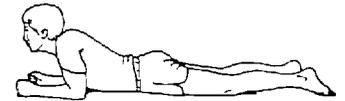
(10) The chair base should roll to decrease spine stress getting to and from the desk.

(11) Break up your sitting, stretch every 45-60 minutes and do standing activities intermittently during your day.

Hold 20-30 seconds, do 3-5 repetitions, 3-5 times per day. They should not be painful.

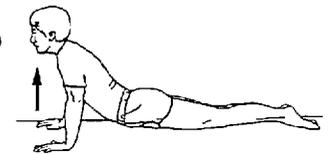
1. ELBOW EXTENSION STRETCH

This is also a good resting position to stretch your back in extension. Prop up on your elbows or a pillow letting your back relax and sag. Try to keep your hips resting on the floor.



2. PRESS UPS

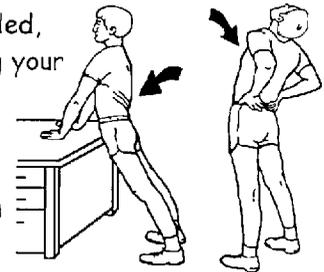
Start on stomach. With your hands up at your shoulders, press up slowly, relaxing your back and keeping your hips on the floor.



3. STANDING EXTENSION

This stretch can be done two ways. Do one of these stretches for every 15-30 minutes of sitting.

1. *Desk Stretch* - with the arms extended, lean onto a desk or heavy table, relaxing your back, supporting your upper body and moving your hips toward the desk.

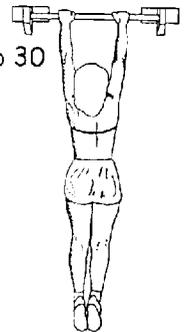


2. *Standing Stretch* - place your hands in the small of your back and gently lean backwards.

4. HANGING STRETCH

Using an overhead bar or door jam, hang for 20 to 30 seconds.

Alternate Chair Hangs: in a arm chair, push up, suspending your body for 20 to 30 seconds.



Hold 20-30 seconds, do 3-5 repetitions, 3-5 times per week.

1. ADDUCTOR STRETCH

Step forward and to the side.

Slowly lean toward the forward knee, keeping the rear leg straight, until you feel a stretch at the rear inner thigh.



2. HAMSTRING STRETCH

Sitting on the edge of a bed or bench, with one leg up horizontal and the other straight and on the floor. Keeping the back straight and the knee flat, slowly lean forward at the hips.



3. GLUTEAL STRETCH

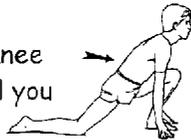
One leg behind and the other rotated inward.

Slowly rock back until you feel a stretch in the buttock on the side of the rotated leg. This can also be done standing with the bent leg on a table.



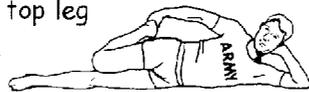
4. HIP FLEXOR STRETCH

One leg behind and the other in front with the knee bent and the foot flat. Slowly rock forward until you feel a stretch in the front of the hip of the rear leg.



5. QUAD STRETCH

On your side or standing. Slowly pull the top leg back from the ankle, bring the knee back behind your hip and the heel toward your buttocks.

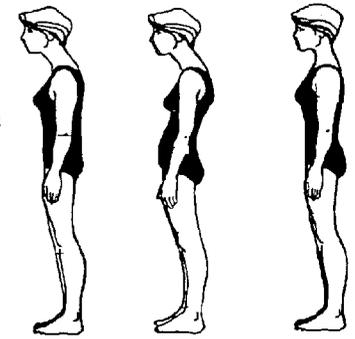


6. GASTROC STRETCH

Leaning into something stable such as a wall. Your rear leg is straight with the foot flat and the front leg is bent with the foot flat. Slowly move until you feel a stretch in the calf.



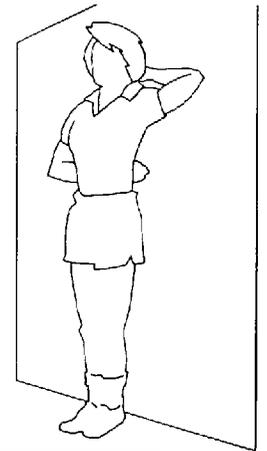
Balance is key. Too little lower back (lumbar) curve and you place stress on the disc (left figure). Too much lumbar curve and stress is placed on the facet joints (middle figure). The best posture is balanced (right figure). By practicing the pelvic tilt, slightly tightening your stomach and rocking your pelvis forward and back, you can find your neutral balanced standing posture.



- (1) When working in standing, position the work so that you don't have to bend. Elevate the table or elevate the work object to your waist or chest level.
- (2) If the table or work can't be elevated, use a tall chair or stool to bring your body to the work without bending the spine.
- (3) Standing and walking on softer surfaces reduces stress on your back - Use rubber mats at your work space, or wear soft soled shoes.
- (4) Placing one foot on a stool or ledge can decrease stress on your lower back.

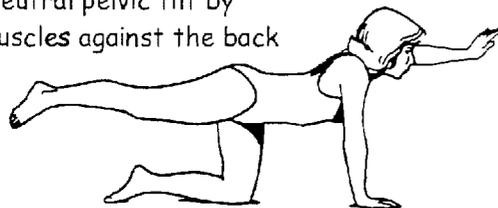
WALL POSTURE CHECK

- (1) Back of the head about an inch (2 fingers width) from the wall.
- (2) Ear centered over the shoulder.
- (3) Shoulder blades lightly touching the wall.
- (4) Neutral curve at the lower back, measured with the width of your wrist.
- (5) Buttocks lightly touching the wall and hips centered over knees.
- (6) Knees straight but not locked.
- (7) Heels slightly away, weight even over foot.

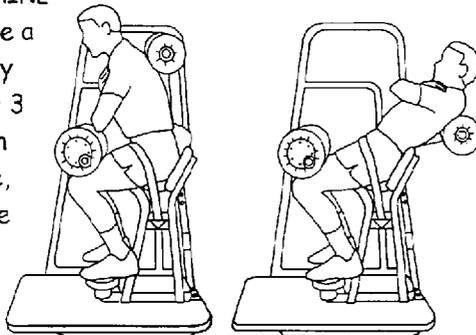


5. KNEELING ARM & LEG LIFT

On your hands and knees, alternate lifting one arm and the opposite leg. Maintain a neutral pelvic tilt by tightening the stomach muscles against the back muscles.

**6. BACK EXTENSION MACHINE**

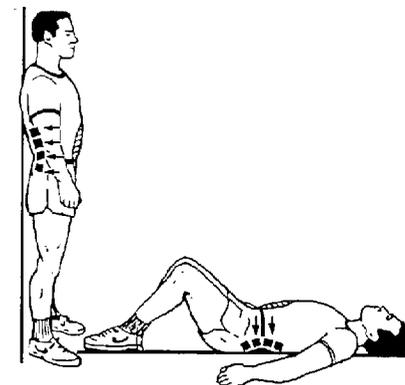
Use the waist belt. Choose a weight you can do smoothly for 20-30 repetitions, for 3 sets. Tighten the stomach muscles, press back, pause, and return smoothly to the start position. Don't use quick or jerky movements.



Do 15-50 repetitions slowly, 3-4 sets, 3-5 times per week. Try to do 1000 total repetitions per week.

1. PELVIC TILT

Standing against a wall or lying down with the hips and knees bent, tighten your stomach muscles, pushing your back against the surface. When standing for prolonged periods do a mini-pelvic tilt to decrease back stress.

**2. PARTIAL SIT UPS**

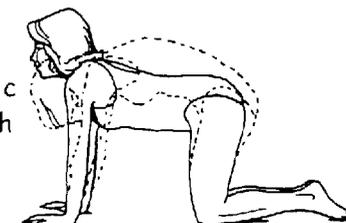
Start by doing a pelvic tilt. Keeping the lower back flat on the floor, keep your head and neck straight and raise your shoulder blades off the floor. Keep your lower back on the floor and uncurl slowly.

**3. OBLIQUE PARTIAL SIT UPS**

Start by doing a pelvic tilt. Keeping the lower back flat on the floor, keep your head and neck straight and reach to one side, raising just one shoulder blade. Go both directions.

**4. ANGRY CAT EXERCISE**

Position yourself on your hands and knees with your back in a neutral pelvic tilt, (don't sag). Tighten your stomach muscles and arch your back up.

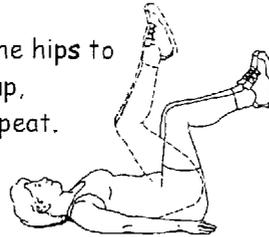


5. KNEE TO CHEST SIT UPS

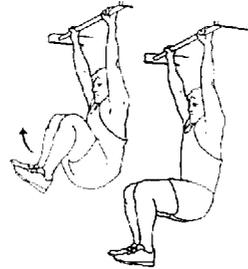
Hands interlocked behind the head, and head and neck in a neutral. Tighten the stomach muscles and rotate your trunk bringing one shoulder up at the same time bringing the opposite knee toward your raised elbow. Rotate and curl slowly up, pause and slowly return. Go both directions

**6. REVERSE SIT UPS**

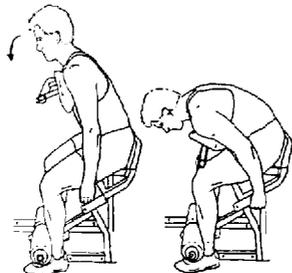
Lying on the floor or a weight bench, bend the hips to 90°. Tighten the stomach and roll the hips up, pause, return to the starting position and repeat.

**7. HANGING LEG RAISES**

Hanging from a bar or supported by the forearms, start with the hips at 90°. Tighten the stomach muscles and roll the hips up, pause, return to the starting position and repeat. Control the motion slowly to eliminate body swing.

**8. ABDOMINAL MACHINE**

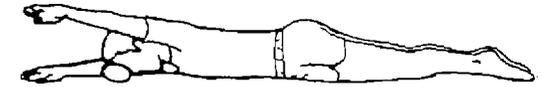
Straddle the machine. Tighten the stomach and back muscles together and slowly curl the chest toward the knees, pause and uncurl slowly,



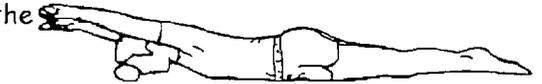
Strengthening exercises should be done 2 to 3 days per week. You should do 15 to 30 repetitions, and if using a weight machine or cuff weight the resistance should be light to moderate without causing pain. You should feel mild muscle fatigue at the end of each set. Do 3 to 4 sets.

1. SINGLE ARM LIFTS

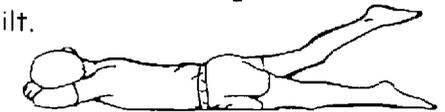
Slowly raise one arm up, pause and repeat with the opposite arm, keeping your chin tucked. If this causes shoulder pain bring the arm down to the side and lift.

**2. DOUBLE ARM LIFTS**

On your stomach, lift both arms. Maintain a neutral back/pelvic tilt, (don't let your back arch or sag). If this causes shoulder pain bring the arm down to the side and lift.

**3. SINGLE LEG LIFTS**

Tighten your back and stomach muscles and lift one leg. With only light pressure through the bottom leg, slowly lift the other leg 8 to 12 inches. Keep your back and trunk muscles tight holding the pelvis in a neutral tilt.

**4. ALTERNATE ARM & LEG LIFTS**

Keeping the leg straight, lift from the hip raising the foot about 8-10 inches. At the same time, lift the opposite arm. (If this causes shoulder pain bring the arm down to the side and lift.)

