

# PROTECTING YOUR BACK

## ***INTRODUCTION***

Lower back pain is an occupational hazard for many healthcare workers. Even if your back feels fine now, you may be straining it if you:

- Have poor posture
- Are out of shape or overweight
- Move your body incorrectly

All these strains add up until one day a simple act like bending over can bring on sudden chronic back pain. Back injuries may be extremely painful and can cause long-lasting disability and loss of work. In short: back injuries hurt - you, your family and your job.

To know your spine is to respect it. This complex and hard-working structure will serve you well if you take good care of it.

Your spine consists of:

- 24 interlocking bones with flexible joints called vertebrae.
- Shock absorbing discs between each pair of vertebrae.

Other parts of your body can help your back stay healthy:

- The muscles of the abdomen, buttocks and hips help support the spine.
- The leg muscles can provide much of the power for lifting.
- Most important is the mind. If you plan ahead and use common sense, you will make things as safe and easy for your back as possible.

## ***POSTURE***

Good posture means keeping your back straight, right? Well, not exactly, In fact:

- When correctly aligned, the spine has three gentle curves. It curves in at your neck, out in the chest region and in again in the lower back or lumbar region.
- These three curves help distribute pressure evenly throughout the vertebrae and discs.
- Rounded shoulders, a slumped sitting position, and "sway back" create weight imbalances that strain parts of your back.
- An overly straight, stiff posture also strains your back.

Check your posture:

- Stand sideways in front of a mirror.
- Imagine a straight- line passing from the center of your head through the front of your shoulder, the center of your hip, behind your kneecap and in front of your anklebone. Keep gentle inward curves at your neck and lower back and a gentle outward curve at your upper back.
- Now sit down. The line should pass through the same points and out the center of your hips, with only a slight curve in your lower back.

## ***BODY MECHANICS***

Using good posture whether you are sitting, standing, lifting, bending, pushing or pulling is one of the first principles of good body mechanics. Body mechanics - the way you move your body and back - can help prevent back injury.

### *Lifting*

Lifting is the most common cause of back injury among healthcare workers. When lifting, follow two general rules:

- Keep loads close to your body. This will keep the pressure on your spine as low as possible.
- Bend your knees, not your back. Bending at the knees also encourages you to use your leg muscles, which are far more powerful in lifting than back or arm muscles.

### *Safe Lifting*

To lift safely:

- Evaluate the load you want to lift. Is it light enough to carry or too heavy?
- Move one foot out in front of you in the direction you are moving.
- Keep both feet flat on the floor and slightly flex the knees.
- As you reach, bend slightly at the hips, holding the spine in neutral.
- To lift, move both feet closer to your load, bend at the hips and maintain the spine in neutral.
- Jerky movements risk back strain. Move smoothly.

### *Mechanical Assistive Devices*

Although mechanical assistive devices vary by facility, some are found almost everywhere. You should learn to use any that are available where you work.

### *Lifts*

Sit-to-stand lifts are used when a patient must stand and then pivot. These are helpful for toileting patients who can bear some weight. Some can serve as walkers once the patient is standing. Others can transport patients. Total or vertical lift devices are used for patients who cannot bear weight or are immobilized. Some double as scales. Those that reach the floor assist in lifting patients who have fallen. Lateral transfer devices move patients laterally such as from stretcher to bed or x-ray table. Multipurpose lift devices can move acutely ill patients laterally from bed to device, transport them to another department, weight them and become a comfortable chair for them.

### *Friction Reducers and Slide Boards*

Friction reducers are used to pull a patient up in bed or to transfer a patient from a gurney to a bed. Placed under the patient, these slide sheets or boards make movement easier by reducing resistance. When using mechanical devices:

- Learn to use the devices correctly.
- Keep the devices readily accessible and in good repair.
- Inspect equipment before each use and report any that needs repair.

### *Sitting*

Sitting can be twice as hard on your back as standing. If you sit on the job:

- Get a chair that supports your lower back. Or use a lumbar cushion. Even a rolled towel placed between the chair and your lower back helps.
- Adjust your chair so your knees are at least as high as your hips when your feet are on the floor. Desktop should be slightly above your waist.
- Sit close to your work - do not lean over it.
- Do not slump.

When sitting for long periods, take frequent back breaks to get up and stretch.

- Stand, press your palms against your lower back and gently arch your back.
- While seated, press your back against the chair back. Reach straight up from your shoulder with your right arm. Look up and feel the stretch extend through your side. Switch arms. Repeat this sequence four times.

### *Standing*

When standing:

- Place one foot on a low stool or other object
- Change positions frequently
- Wear comfortable shoes and stand on a cushioned mat.
- Bring your work to a comfortable level. Don't bend over it.

### *Bending or Leaning*

When bending and leaning:

- Let your legs do the work.
- Stand with your feet shoulder-width apart, one foot ahead of the other.
- Contract your stomach muscles.
- Move back and forth by shifting your weight from foot to foot.
- To lower your upper body, bend your knees and hips, keeping your back aligned. Rest one knee on the floor for more support.
- When leaning forward, move your whole body, not just your arms.

### *Pushing or Pulling*

When pushing and pulling make sure you:

- Push, don't pull, whenever possible. You can move twice as much without back strain.
- Stay close to the load.
- Don't lean forward.
- Use both arms and tighten your stomach muscles.

### *Repetitive Motion*

Repetitive motions like stacking laundry or food trays can add up to back pain unless you:

- Keep loads small, if possible
- Tighten your stomach muscles before lifting.
- Change positions frequently.
- Turn your whole body by taking little steps or pivoting.

## **EXERCISE**

A healthy back is a fit back. Studies show that people in poor physical condition are most apt to injure their lower backs. Exercise also helps you reduce stress and lose weight, both of which can contribute to back trouble. Here are some tips:

- Just 20 minutes of aerobic exercise, three times a week, is the backbone of a good fitness program.
- Warm up thoroughly before starting any vigorous exercise and cool down afterward.
- Maintain good posture throughout your workout.
- While performing each exercise, slowly breathe in through your nose and out through your mouth.
- Exercises that are easy on your back include brisk walking and swimming.
- If you have injured your back, start with the backstroke and sidestroke. Work up to swimming the crawl with a flotation device around your waist to minimize back strain.
- Check with your physician before starting an exercise program, especially if you have back problems.

You should also do exercises that strengthen and stretch your back muscles. These will get you started.

### Partial Sit-Ups

For strong abdominals:

- Lie on your back with your knees bent, feet flat on the floor.
- Tighten your stomach muscles and press your lower back into the floor.
- Tuck your chin into your chest and slowly curl your upper body off the floor while reaching with your arms toward your knees. Hold.
- Return to your starting position and relax your stomach and lower back muscles. Work up to ten repetitions.
- To increase the difficulty:
  - Fold your arms across your chest or grasp your hands behind your head, not your neck.

### Back Extension

To improve posture and restore proper back alignment:

- Lie on the floor on your stomach. If this is uncomfortable, place a small pillow under your waist.
- Reach forward with your hands slightly more than shoulder-width apart, pressing your head and shoulders toward the ceiling while straightening your arms.
- Allow your lower back and waist to press into the floor.
- Hold this for five seconds and return to your starting position.
- Repeat five times.

### Hamstring Stretch

To stretch those hamstrings:

- Lie on your back with your knees bent, and your feet flat on the floor.
- Bring your knee toward your chest and grasp your right thigh with both hands, close to your knee.
- Straighten your leg slowly and press your heel toward the ceiling.
- Slowly pull your toes back and then point them toward the ceiling. Repeat this three to five times.
- Return to your starting position. Switch legs.
- Repeat the sequence five times.

### Hip Stretch

To stretch hip muscles:

- Kneel between two chairs with one hand on each chair to support your upper body.
- Extend one leg forward with your knee and hip bent at 90-degree angles and your foot flat on the floor.
- Contract your stomach muscles and align your spine.
- Slowly press your hip forward to shift your weight from your back leg to your front foot. Hold 7 to 15 seconds. Shift your weight to your back leg again.
- To avoid bending forward at the waist, hold your head up and look straight ahead at all times.
- Switch legs. Repeat the sequence five times.

### Knee to Chest

To strengthen your abdominals and lower back muscles:

- Lie on your back with knees bent, and feet flat on the floor.
- Tighten your stomach muscles while pressing your lower back into the floor.
- Bring one knee toward your chest, pausing when your knee points toward the ceiling.
- Grasp the knee with both hands and pull it close to your chest. Hold 7 to 15 seconds.
- Release the knee and let it point toward the ceiling again.
- With your lower back still pressed against the floor, slowly lower your foot to the floor.
- Relax your stomach and lower back muscles. Repeat with your opposite leg.

### Wall Slide

For strong back, hip and leg muscles:

- Stand with your back pressed against a wall, and your feet about 12 inches in front of you.
- Slide down the wall until your hips and knees are bent at a 45 to 60-degree angle.
- Slowly slide back up.
- Repeat five times.

A moderate exercise program may make you feel so good that you will want to go all the way and lose any extra pounds you - and your back - may be carrying. If so, ask your healthcare provider to recommend a weight-reducing diet.

### ***PATIENT TRANSFER***

If you are a nurse, physical therapist, occupational therapist or other healthcare worker who provides direct patient care, you need to take a closer look at how body mechanics can help you protect your back when you transfer patients. After all, you lift loads as heavy as any construction worker. However, the loads you lift are far more precious, flexible - and sometimes, uncooperative - than steel or concrete. Using good body mechanics will protect your back and your patients.

The first three rules of transferring patients are communicate, communicate and communicate! To transfer patients correctly, you must transfer information.

Make sure you:

- Read the patient's chart, consult with the doctor or nurse on the case, and use observation to determine the patient's condition and size as well as physical, hearing or visual limitations.
- If the patient can understand, ask the patient what s/he can do. Can s/he help with their arms or legs? Don't assume a patient is helpless.
- To ease fears and gain cooperation, tell the patient what you are going to do.
- If you have an assistant, tell him/her what you want him/her to do.

### **More Guidelines**

- Do not move a patient who is too large and unable to assist you. Get an assistant.
- Use a mechanical lifting device if one is available, if you are trained to use it and it would be appropriate to the patient's condition.

- Moving a patient by yourself should be your last resort.

### **Pull Up in Bed**

If the patient can help:

- Reach under the patient's shoulders and waist.
- Keep your feet wide apart, knees bent and toes pointed in the direction you will move the patient.
- On the signal, slide the patient as s/he pushes up with his/her feet - all in one smooth motion - until s/he is at the top of the bed.

If the patient is helpless or very large:

- Get an assistant and use a draw sheet.
- Put a plastic bag or liner under the sheet to make sliding easier.
- Make sure you and your assistant grab the same sheet.

### **Transfer from Bed to Wheelchair**

- Adjust the bed to waist level and lock the brakes on the bed and wheelchair.
- Place the chair beside the bed. Remove the armrest nearest the bed and both footrests.
- Make sure the patient is wearing slip-resistant footwear.
- If necessary, move the patient to the edge of the bed, moving first the head and shoulders, then the buttocks, then the legs and feet. Raising the head of the bed can help you lift him/her into a sitting position.
- With the patient sitting at the edge of the bed, place a transfer belt around his/her waist.
- If you do not have a regular transfer belt, you can make one using a sheet or johnny coat. Tied securely around the patient's waist, it makes a safe and secure handle for you to grasp.
- Be sure to grab the belt and not the patient's bedclothes.
- Brace your knees against the patient's knees.
- Make sure the patient's feet are firmly planted beneath him/her and stabilize his/her feet with yours.
- Keep your knees and hips flexed; stay low.
- Get in close to the patient and hold onto the belt or grasp him/her under the arms.
- Explain to the patient what you are going to do.
- On the signal, move the patient to a standing position by pulling on the transfer belt and straightening your knees.
- With the patient standing, pivot, taking little steps and staying close to the patient.
- **DON'T TWIST!**
- Keep your knees slightly bent, your head up, back aligned and stomach muscles contracted.
- Lower the patient into the wheelchair by bending your knees.
- Patient may hold onto your waist or shoulders - not your neck.

If the patient is weak and cannot sit up:

- Raise the head of the bed with side rails up.
- When ready to make the transfer, reach under the patient's arms and grasp his/her forearms, while your assistant supports the patient's lower body by holding his/her legs below the knees.

- On the signal, lift the patient by straightening up and sliding him/her into the seat.

### **Bed-To-Gurney Transfer**

If the patient is too sick to help, give your back a break. Get an assistant use a draw sheet.

- First, adjust the bed to the level of the gurney and lock the brakes on both.
- Move the patient to the edge of the bed.
- Standing beside you assistant, face the patient and each of you place one of your knees on the gurney. Contract your stomach muscles and pull on the draw sheet on the count of three.
- Move the patient first to the edge and then to the middle of the gurney.
- Keep you head up and you back aligned.
- Reverse the process when transferring from gurney to bed.
- Keep movements smooth. Don't jerk!

### **Falls**

If a patient starts to fall:

- Don't try to stop the fall.
- Grasp the patient, and getting as close as you can, guide him/her to the floor.
- Bend your hips, not your back.
- Get help to lift the patient from the floor.

### **SUMMARY**

As you can see, the prescription for a healthy back is simple:

- Posture
  - When correctly aligned, the spine has three curves - in at your neck, out at your chest and in at your lower back.
  - Be sure to practice good posture when standing or sitting.
- Body Mechanics
  - When lifting - keep loads close and bend your knees.
  - When sitting - don't slump. Practice good posture and adjust your chair to suit your body.
  - When standing - move work to a comfortable level, wear comfortable shoes and place one foot on an elevated surface.
  - When bending or leaning - bend your knees and hips, not your back. Let your legs to the work.
  - Push, don't pull whenever possible.
  - When you must make repetitive motions, keep loads small, change positions frequently and avoid twisting your body.
- Exercise
  - Studies show that people in poor physical condition are most apt to injure their lower backs.
  - 20 minutes of aerobic exercise, three times a week is the backbone of a good fitness program.
  - Do exercises that strengthen and stretch your back muscles.
- Patient Transfer
  - Always keep your feet wide apart and your knees bent.
  - Stay low and shift your weight from foot to foot.
  - Don't use your arms.

You have a challenging job - but it does not have to be backbreaking! It is up to you to take care of your patients, and your back!