

# Low Back Care

Simplified

Follow these tips for pain free movement

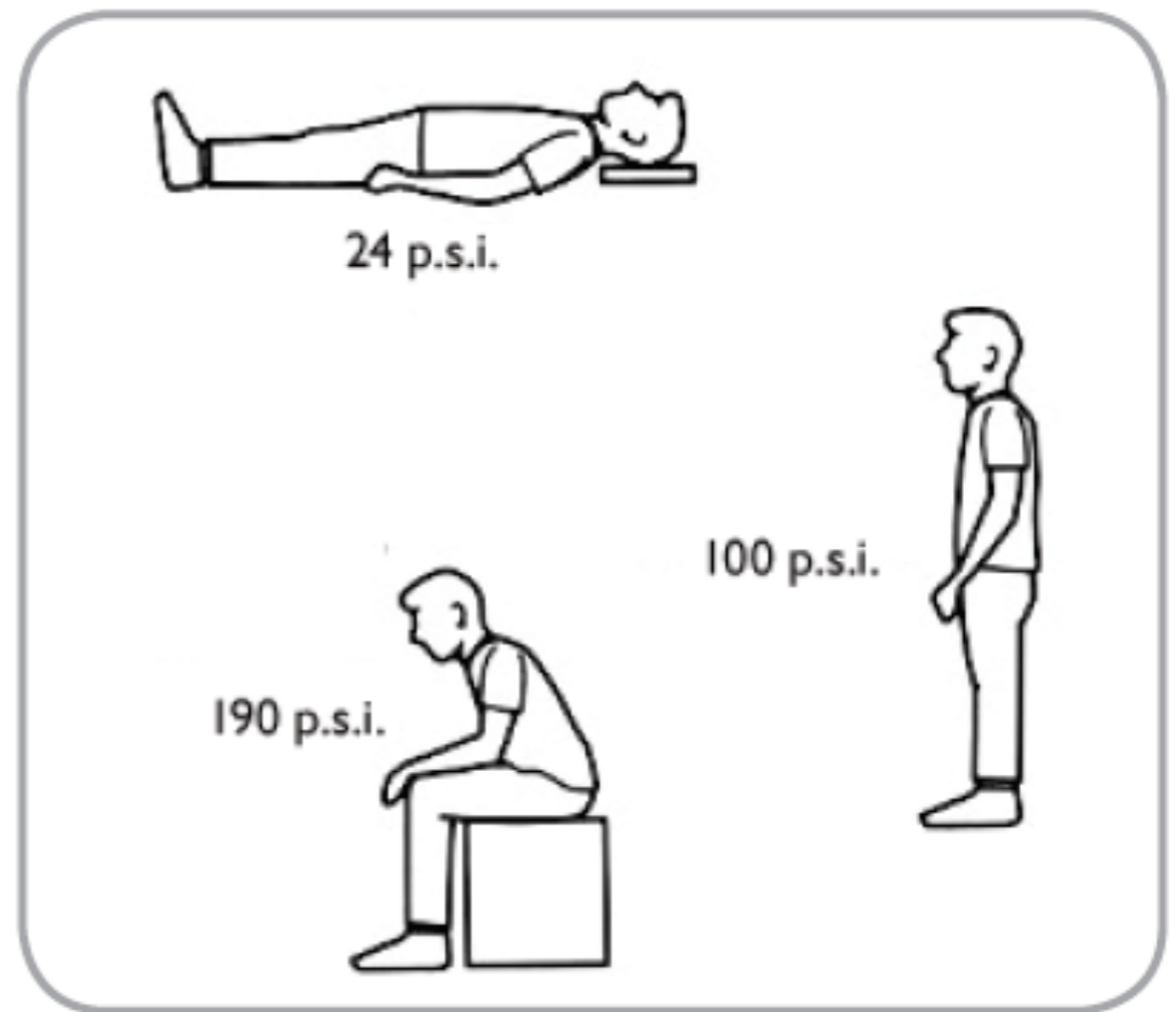
Just read the **red hight-lighted** text for  
quick back care solution tips

If you want more read the Details  
Section.

# To Protect your spine when seated keep the natural curves to your spine

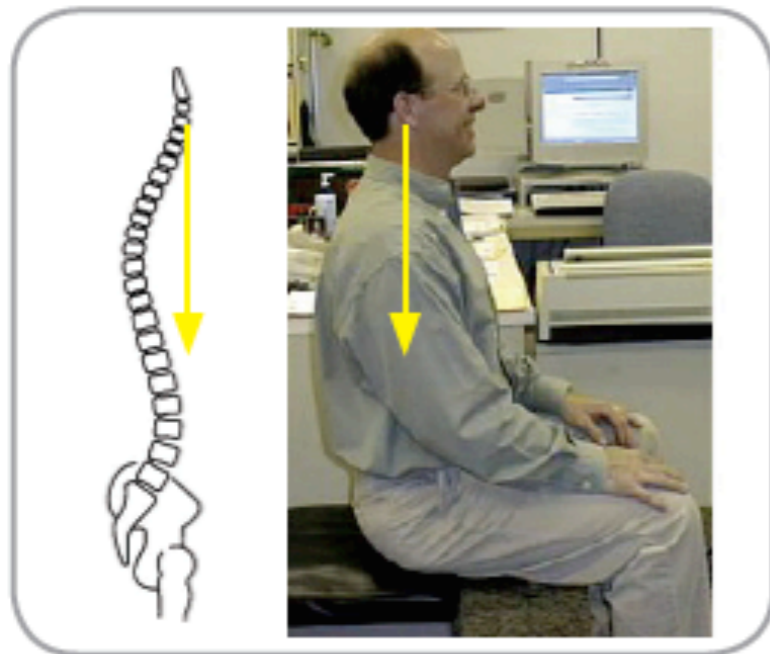
## DETAILS: How Do You Sit, Slumped or Upright?

Slumped postures during prolonged sitting causes various issues, one of which is degenerative changes to spinal discs. Avoid seated spine pressure by maintaining upright seated posture, **where you keep the natural three curves to your spine at all times** - Did you know that there is almost a 100 p.s.i. intra-discal pressure difference between upright seated posture and a slouched posture.

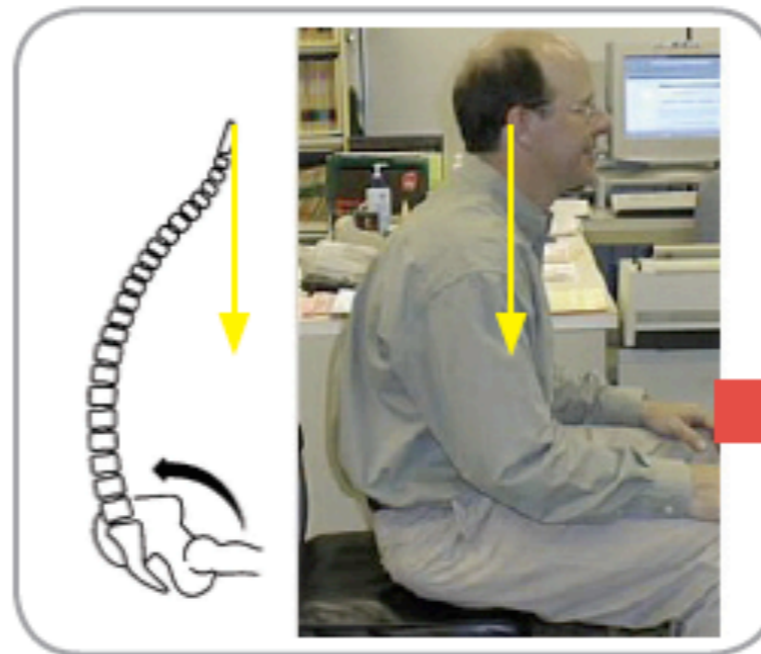


To further that point keep the natural curves (Neutral Spine) while seated or standing. Never Slump! Chance of a bulging disc goes up dramatically. It is almost impossible to bulge a disc when the spine is in Neutral.

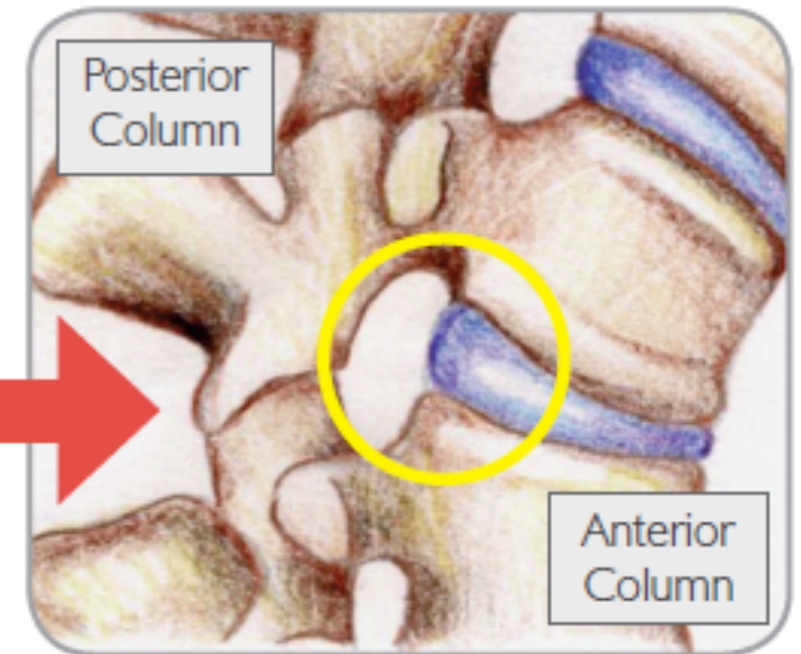
DETAILS: Prolonged slumped seated postures causes the spinal discs migrate to backwards, which may lead to injury such as a bulging disc.



Upright neutral seated posture. Weight of torso distributed over facet column.



Flexed rounded posture. Weight of torso distributed over the "Anterior Column" of support.



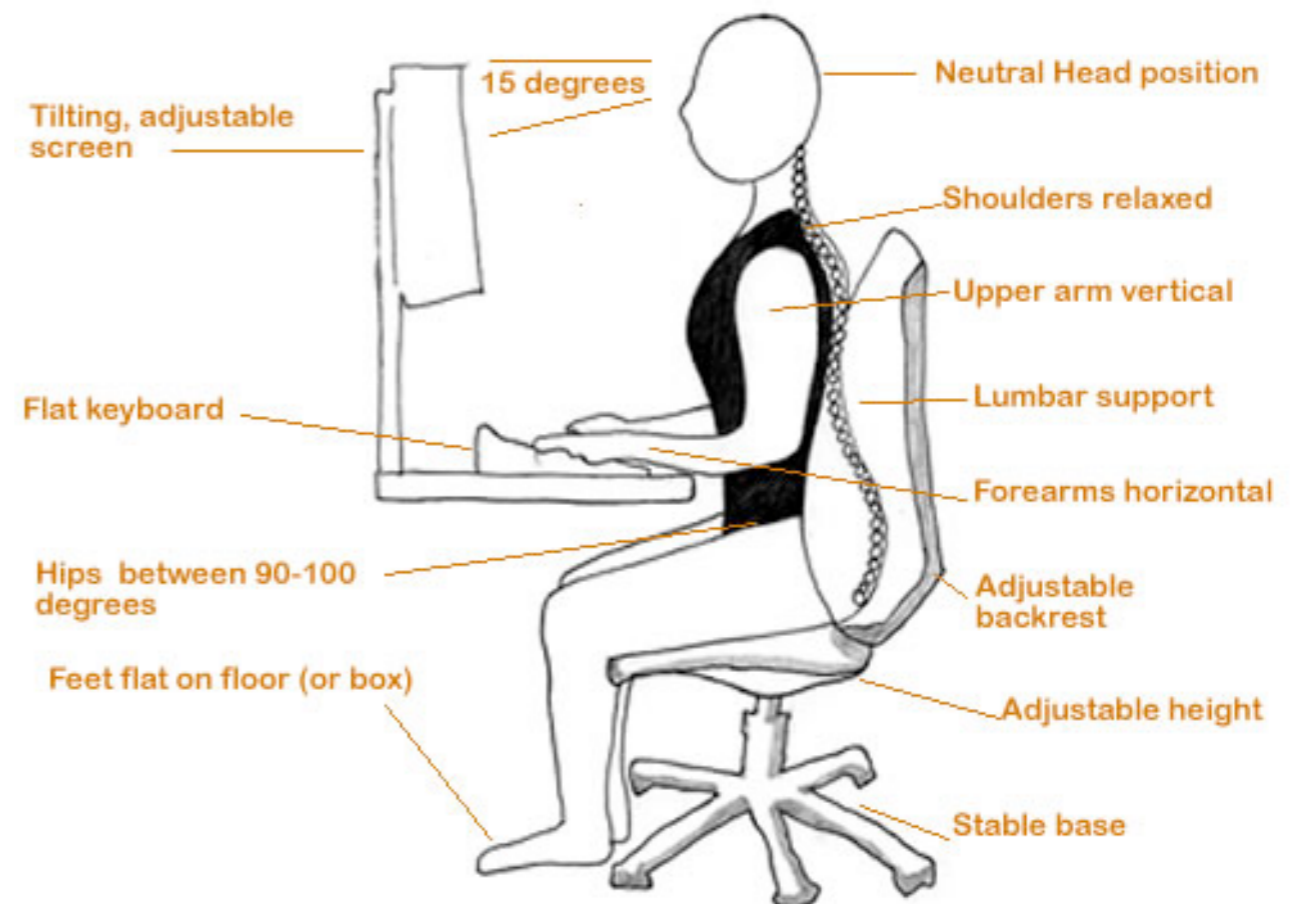
As the weight of the upper torso is repeatedly distributed over the "Anterior Column" of support, the posterior wall of the disc is affected.

DETAILS: Most ergonomist say there is no one ideal seated posture, but these are the best suggestions.

- Sit up with your back straight and your shoulders back maintaining three curves to your spine, where your buttocks touch the back of your chair. Never sit with a slumped posture.
- Distribute your body weight evenly on both hips with feet flat. Do not cross legs.
- Bend your knees at a right angle so they are even with or slightly higher than your hips (use a foot rest or stool if necessary), where there is a space between the back of your calves and the chair.
- Adjust your chair height and work station so you can sit up close to your work where you do not have to reach for anything such as a mouse or phone.
- Allow your shoulders to relax, not elevated or rounded, on an arm rest keeping your arms at a comfortable 90-degree angle in a neutral resting position. Stretch the top of your head toward the ceiling with chin tucked.
- When sitting in a chair that rolls and pivots, don't twist at the waist, instead, turn your whole body.
- You may think it is good to stretch forward in your chair, but that just adds stress to the spine. It is better to stand.
- Keep items at hand reach at desk.

## Best Seated Posture

There is no really best seated posture but the following example comes close. Keep body at 90 degree angles back and legs with the 3 Natural Curves, feet flat, top of monitor at eye level, arms supported, keep mouse and other items at arms length



DETAILS: When in a car use a back support (lumbar roll) at the curve of your back. Keep the curves to your back like in previous slide. Your knees should be at the same level or higher than your hips. Move the seat close to the steering wheel to support the curve of your back. The seat should be close enough to allow your knees to bend and your feet to reach the pedals. Try to keep head back against rest.

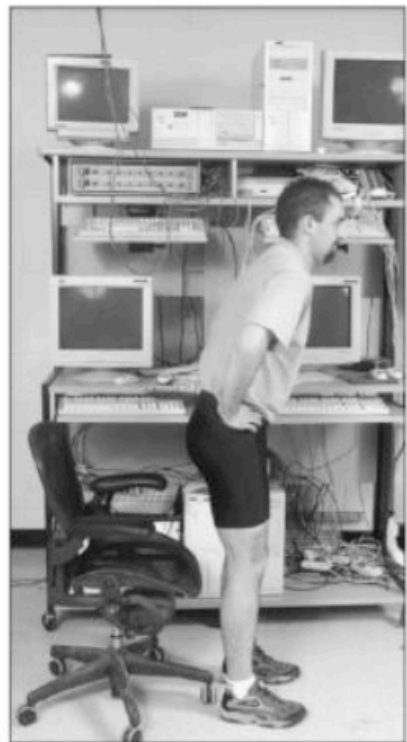
**Best Seated Car Posture**  
**Keep natural 3 spinal curves, use lumbar support, knees at same level as hips or higher, and keep head against support - It is a good idea to use a lumbar support!**



### **Tips to reduce your risk of developing musculoskeletal aches and pains from driving**

- Take a break every couple of hours and more frequently if you have any specific complaints
- Make small adjustments to your driving position regularly
- Try and set up your seated car ergonomics to best suit your specific need
- Make sure you get out of the car as regularly as possible and carry out stretches

**Ideal Seated Postures cannot be maintained for more than ten to 20 minutes. Therefore, alter seated postures throughout the day. Even better, stand up every 20 minutes for 10-20 seconds and lean back and reach to the ceiling.**



DETAILS: Problem with Ideal Upright Seated Posture Ideal Seated Postures cannot be maintained for more than ten to 20 minutes. Therefore, alter your seated postures at times. Try to use an ergonomic chair. An ergonomic chair is one that facilitates easy posture changes over a variety of joint angles and allows one to stand easily. Stand Up for Productivity every 20 minutes for 10-20 seconds - Current research indicates that the ability to vary working postures throughout the day in a well-designed workplace coupled with tailored breaks and exercise can reduce back and other pains by more than 80%. In one study individuals who did not alter their position (non-standers) took an average of 47% more breaks throughout the day and they were 56% longer. Some guidelines suggest performing exercise breaks while seated, and some even go as far as to suggest flexing the torso in a stretch. This can be dangerous! A rest break must consist of the opposite activity to reduce the imposed stressors. A recommended break involves standing from the chair and maintaining a relaxed standing posture for 10 to 20 seconds. The best strategy is to raise arms over your head (see figure) and then push the hands upward to the ceiling and then take a deep breath. By inhaling deeply, one will find that the low back is fully extended. Try to find opportunities for standing like this in your day.

Never do Strenuous Activity after being Seated for Sometime. Your back is primed for injury after being seated. Give it time to acclimate by standing and walking before using it. Example do not do anything strenuous after a long car drive.

DETAILS: When your seated for sometime spinal discs migrate backwards and spinal muscles lose their ideal alignment, all of which primes the back for injury. Therefore, never do anything strenuous activity after being seated for sometime. If you have to make sure you ambulate around for several minutes before doing the activity. One of the worst things for an athlete is to be seated on a bench during a game and then be rushed onto the field/court - the low back and for that matter the entire body needs time to adjust. Also golfers would be better off walking a course than riding in a cart.

# Avoid Exercises, Sitting, and Stretches after Awakening. It takes 30 minutes of standing for you spine to get in alignment.



DETAILS: Avoid physical activity upon awakening especially early morning stretches or lifting. This time of the day is when the spinal discs are most sensitive and vulnerable to damage. It takes around 30 minutes of standing for the discs to acclimate - fun fact you are taller in the morning due to spinal discs being larger due to fluid accumulation - that is why they are more vulnerable. It is not a good time to sit after awakening as well, just stand.



**Always Keep your Back in Neutral and Brace your Abdomen when doing any physical Activity. In other words never flex your spine when lifting an object. Keep you back locked in a neutral position and tighten your abdomen muscles when lifting. Lift using the leg and buttock musculature on the support of a braced abdomen.**

DETAILS: According to one of the world's leading authorities on back pain, Stuart McGill, the best way to protect your back when doing any lifting motion and for that matter any physical activity is to make sure you keep a neutral back posture.

This is where the back maintains its natural curve. This position is the most protective for the back. To add support to the back McGill suggest abdominal bracing by tightening the abdominal musculature while lifting, pushing, or pulling an object and when producing force in an athletic event. This action creates a natural protective belt.



Neutral Spine Position

Flexed Spine Position

# Here are more details on how to lift. Want a spine sparing technique use the Golfers Squat.



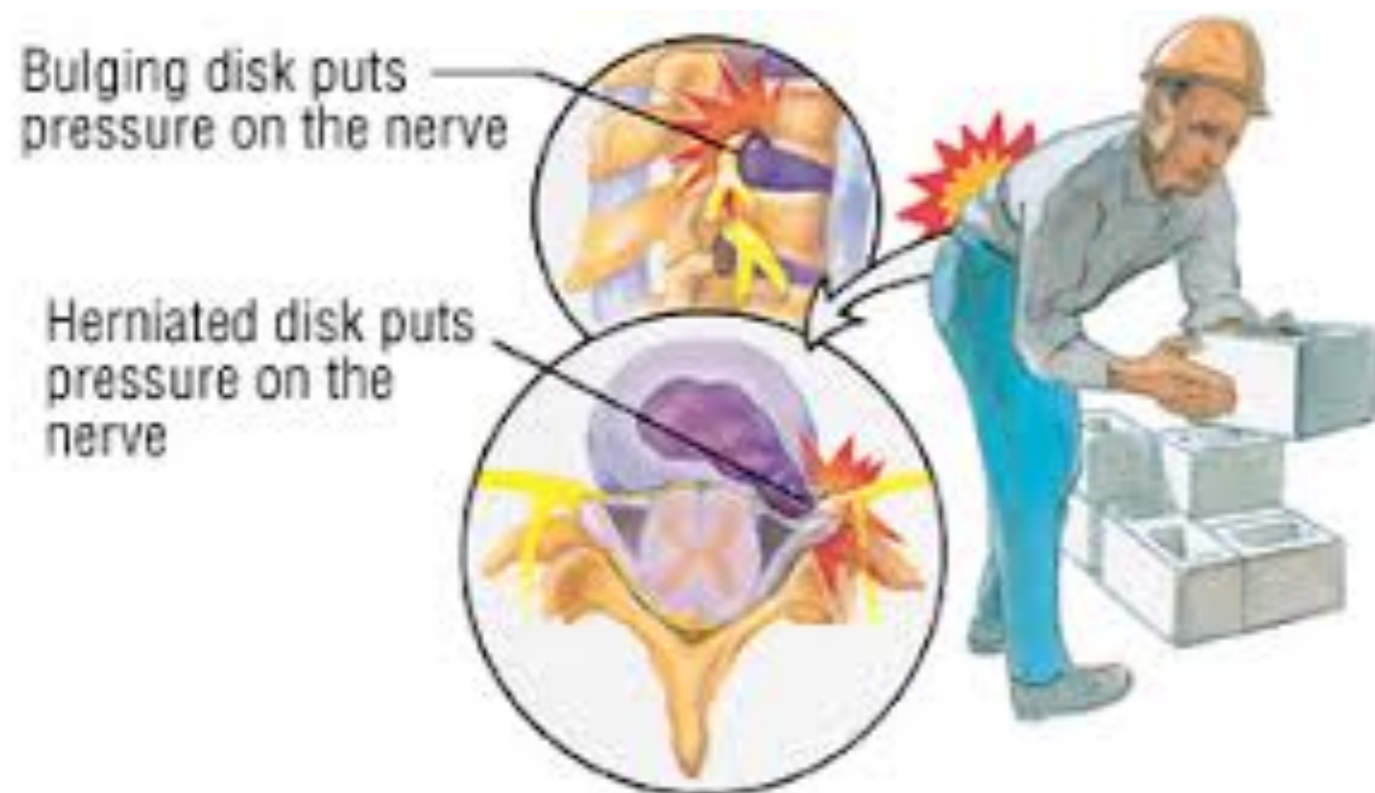
•A spine sparing technique is a golfer's squat

DETAILS: Suggestions for when lifting an object

The process of lifting places perhaps the greatest loads on the low back and therefore has the highest risk of injury. Use of proper lifting mechanics is critical to prevent injury. In the end, it is more important how you lift than how heavy a weight you lift. Here are a few tips on how to lift safely:

- Keep your upper back straight and assume a neutral position with your back. Do not bend forward at the waist, bend from the hips.
- Place the load immediately in front of you.
- Bend your knees to a full squat or lunge position, and let your arms and legs do the work. Tighten your lower back, buttocks, and belly to support your back and lift now from the legs to the standing position.
- Keep the load as close to your body as you can, even if the load is light.
- While holding a heavy object, use your feet to turn, not your back. Try not to turn or twist your body. Twisting torque is very dangerous for the back.
- Never lift from a forward stooped / imbalanced position or lift from a twisted / sideways position.
- Do not lift heavy objects above shoulder level.
- For heavy or awkward items, use a hand truck or ask someone to help you.
- A spine sparing technique is a golfer's squat for lighter loads.

**Do you want to injure your spine then flex it under load. If you want to injure it more flex and twist at the same time. The spine is not meant to bend and twist under load. Never twist when shoveling or racking. Keep the spine Locked and Braced.**



DETAILS: Dr. Stuart McGill, the world's authority on low back disorders, suggests a sure proof way to injure your back is to flex your spine, in other words round the spine where the natural curve is lost, when lifting, pushing, or pulling an object. In this position the discs in your spine are most vulnerable (similar to after being seated for sometime as mentioned previously). The discs are even more vulnerable when flexing and twisting the spine under load. McGill therefore suggests never to twist the spine when under load.

# Push and Pull from the Mid Line of your Body to Protect the Back when doing chores or exercising



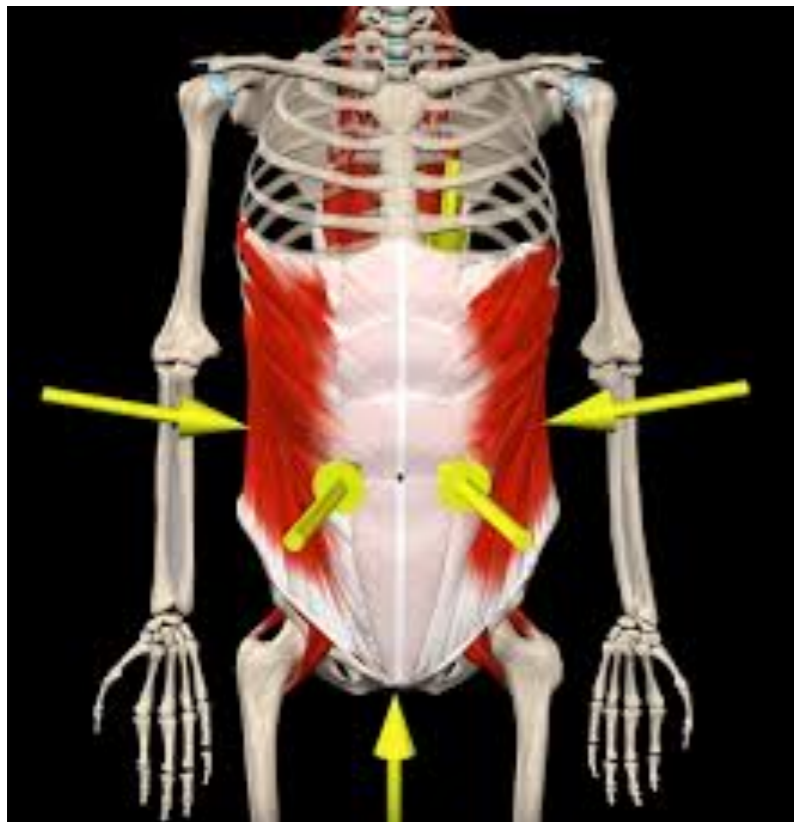
DETAILS: Accomplish the actions of pushing or pulling into the navel, and not above, to the side, or below (example when vacuuming hold the vacuum at the center of the waist to protect the back or when opening a door pull into the navel).

Snow Shoveling is a major **Low Back Pain Producer**. It does not have to be. Follow these Rules to avoid pain: Always take breaks. Lift half shovel loads. Whenever possible, push the snow rather than lifting it. Always push through the center of the body (waist/navel height) and not from the side. The same holds true for when vacuuming. Use your legs and move the snow rather than twisting and throwing. *Twisting with weight is a back pain producer*. Also, remember when lifting or pushing the snow keep a locked and braced neutral spine. Also follow these other ergonomic lifting techniques when shoveling:

- Always face towards the object you intend to lift - have your shoulders and hips both squarely facing it.
- As mentioned bend at the hips, not the low back, and push the chest out, pointing forward then, bend your knees and lift with your leg muscles, keeping your back straight where spine is neutral and locked. It might be a good idea to brace your abdomen.
- Keep your loads light and do not lift an object that is too heavy for you.
- If you must lift a shovel full, grip the shovel with one hand as close to the blade as comfortably possible and the other hand on the handle.
- As mentioned avoid twisting the back to move the snow to its new location - always pivot your whole body to face the new direction.
- Keep the heaviest part of the object close to your body at your center of gravity - do not extend your arms to throw the snow.
- Walk to the new location to deposit the item rather than reaching or tossing.
- When gripping the shovel, keep your hands about 12 inches apart to provide greater stability.
- Use your front of your thighs as support when squatting down to shovel
- Push the snow forward do not throw



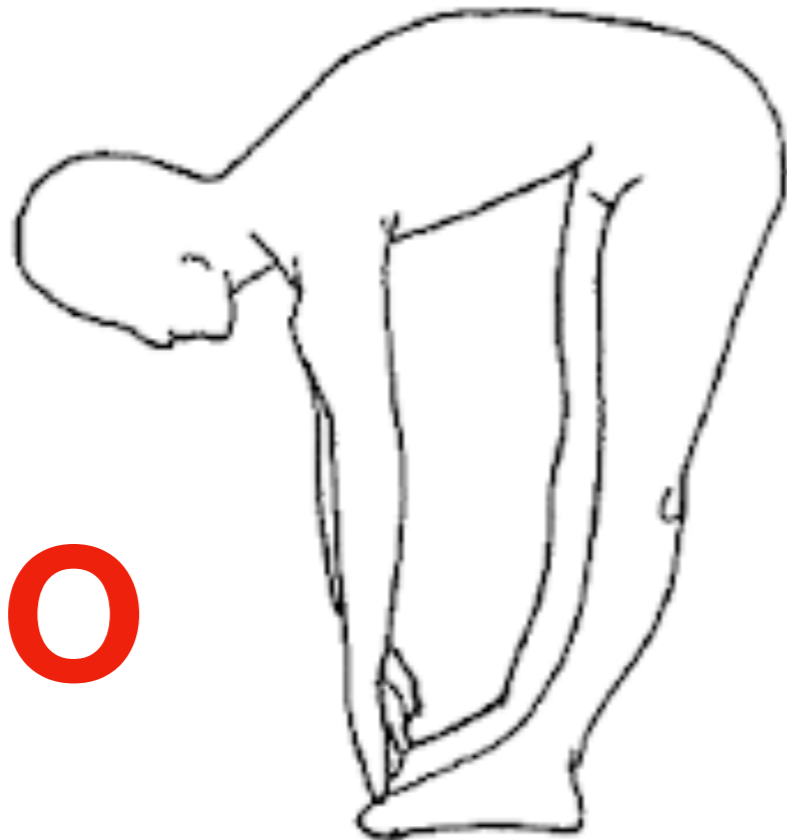
Bracing your abdomen and torso protects your spine during physical activity especially when exerting yourself when lifting and object. If you are not bought on this idea then next time you have back pain try bracing your abdomen if you have to do light activity. You should feel a positive difference.



DETAILS: One way to learn how to brace your abdomen is to imagine the way you would tighten your torso and core if someone was trying to hit you in the stomach. As you contract the abdominal muscles, the erector spinae muscles immediately go into joint action and support the back from the rear. In other words, you create a natural belt or girdle that stabilizes and protects the spine with muscle co-contraction. Co-contraction is when multiple muscle groups work together and simultaneously contract to hold a stable position. The main muscles co-contracting in this movement are the transversus abdominis, the pelvic floor muscles, and the multifidus muscle.

# Full spinal flexion is a common stretch. I would not recommend this stretch for most people.

**NO**



Full standing spinal flexion

DETAILS: Full standing spinal flexion is a very common exercise. Many Yoga students perform this stretch regularly. Although it feels good while you are doing it the stretch places a lot of stress on your spinal discs. The reason why it feels good and even makes people with low back pain feel better for a short period of time is because of a nerve reflex which causes inhibition of the musculature. When the inhibition goes away the pain comes back. What can happen also is the discs can get damaged or even bulge when in this position. There is not real benefit to this stretch and there are other stretches that do a better job. Believe it or not when discussing low back disorders greater spine mobility has been associated with low back trouble in many cases (e.g., Biering-Sorensen, 1984) and there have been other studies showing that low back issues may develop from some Yoga practices. So I would avoid this stretch and stretches in a similar position that involves twisting.

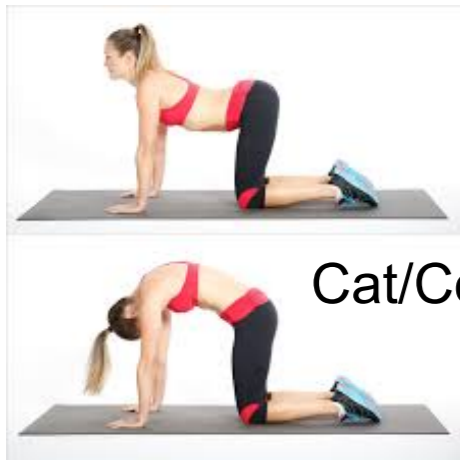
# Stretching: Being excessively flexible in the spine is not protective when it comes to back health. A normal balanced degree of flexibility is.



Full standing spinal flexion



Standing Back Extension

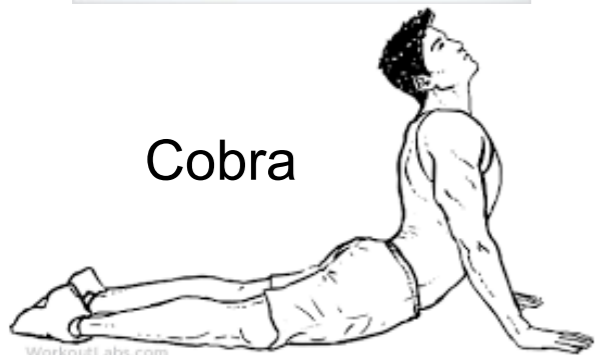


Cat/Cow

**YES**



Child Pose



Cobra



Knee to Chest

DETAILS: Stretching is a good thing for your arms and legs and shoulder and hip girdles, but you need to be careful when working with your spine. Too much flexibility to your spine is not protective and for that matter can be dangerous. You want a normal degree of spinal flexibility. Your spine is built to be a stable support so that your arms and legs can do their work. So **DO NOT PUSH IT** when it comes to your spine and stretching. To this point certain stretches may be dangerous to the spine, such as full spinal flexion while standing. Some stretches may be very good for certain back conditions, like the Cobra for a bulging disc, but this same stretch may be dangerous for someone with spinal stenosis. If you have a spine condition talk to a physical therapist about what stretches would be best for you.

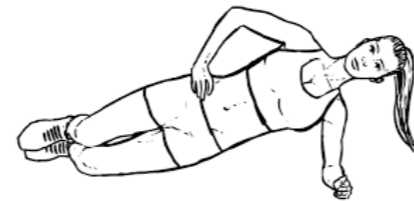
As a general rule of thumb perform gentle stretches not taken to the end range of motion if you have no spinal issues are helpful such as the 1. Standing Back Extension 2. Cat/Cow 3. Cobra 4. Child Pose 5. Knee to Chest, but again I would avoid standing spinal flexion stretches considering that we spend most of our days in a spinal flexed position from seated postures.

**These are great daily stretches**



# Core Training: What is very protective to the back is muscular endurance of the core. Muscular endurance trumps strength when it comes to back health.

## 1. SideBridge



Modified on knees SideBridge

## 2. BirdDog



## 3. McGill Crunch



DETAILS: People think that strength matters when it comes to the low back health. Strength matters to fitness but what has been found to be more important when it comes to back health is the muscular endurance of several muscles that wrap around the spine and hips. Muscular endurance is the ability of the muscles to sustain a contraction for a period of time. The muscles that should be trained are to the front, side, and rear of the spine, the gluteal muscles, and the deep spinal muscles that work around the spinal levels. These muscles are considered the core, which are used every day to keep us upright and to help us move and work efficiently. **The Big McGill Three Core Exercises** are 1. The Side Bridge (which can be modified-on knees) perform 1-3 sets of HOLDS for 30 secs or 5-10 reps of HOLDS for 10 secs 2. The BirdDog perform 1-3 sets of HOLDS for 30 secs or 5-10 reps of HOLDS for 10 secs and 3. The McGill Crunch, which is a very shallow crunch, where the shoulder are barely lifted off floor with only one knee bent. You can use a hand to support your neck. These exercises can be done daily. ASK us for more safe core exercises. If you have a spine condition talk to a physical therapist about what core exercises would be best for you.

**Do Not Do Full Sit Ups - Too Much Flexion to the spine with Full Sit Ups. It does more harm than good.**  
**Do Not Use a Weight Lifting Belt - It Creates a Weak Back.**



DETAILS: McGill also suggest to never perform full sit ups and to avoid full spine flexion exercises, especially under load. The military has discontinued doing full setups as a test.



Do not use a weight lifting belt when training or at work - it creates a weaker spine.

## Ergonomic Raking Techniques

Take all the suggestions above and use the following.

- Stand upright with a slight bend at the waist.
- Keep your abdomen tight and pull through the arms not allowing your body to twist.
- Your feet should be “staggered or a scissor stance” for stability. This enables you to extend the rake and pull it back towards you with the least amount torque on your back.
- Your knees should be slightly bent.
- Raking is usually a dominant hand chore with the dominant side doing most of the pulling, but try to switch sides and change your feet position often.
- Don't overextend your reach because this will force you to flex at the waist and flex your shoulders excessively to extend the rake forward. Don't try to pull too hard or too many leaves at one time. This will cause the spine to twist excessively and might cause damage or an injury.

Raking can cause major spinal issues. Some keys are to keep your abdomen tight and pull through the arms not allowing your body to twist, try to switch sides, and change your feet position often.



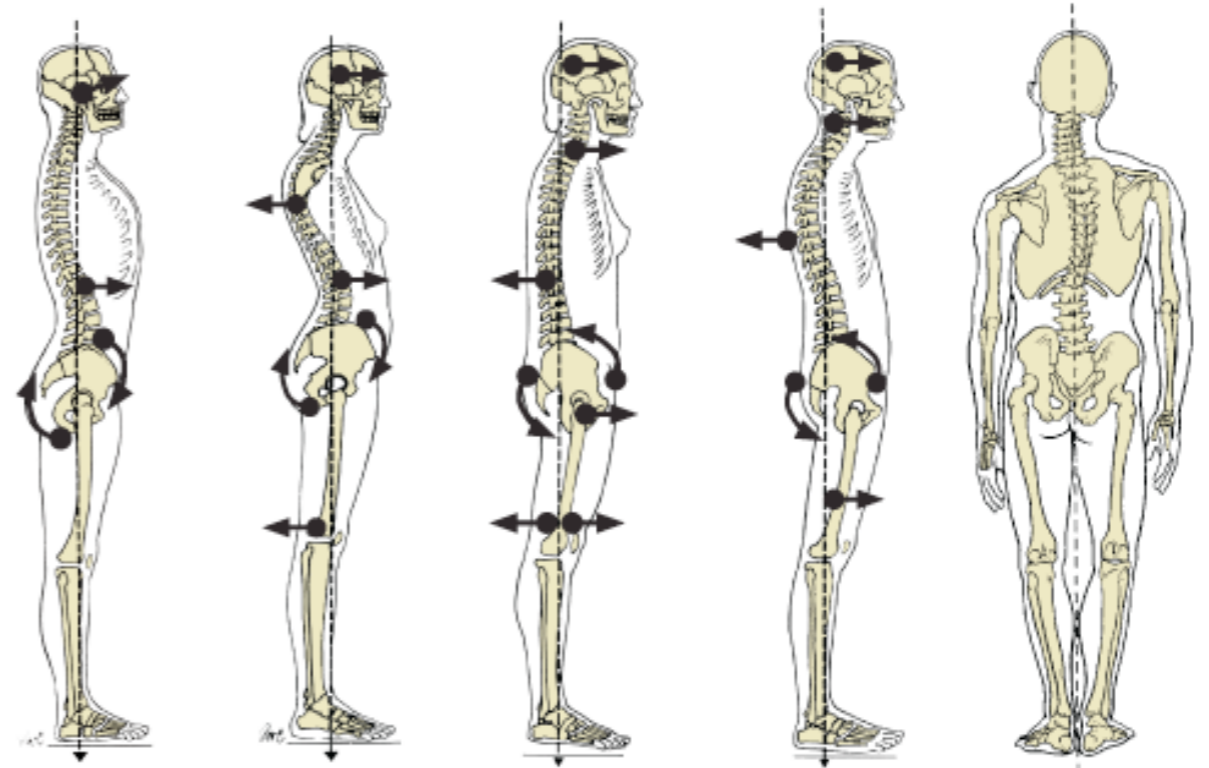
## Details: Good standing posture

There are several postures which may cause back pain. When standing, keep these tips in mind:

- Stand straight and tall with your shoulders back.
- Keep your head level and in line with your body.
- Pull in your abdomen and keep back neutral.
- Keep your feet about shoulder-width apart.
- Don't lock your knees.
- Bear your weight primarily on the balls of your feet.
- Let your hands hang naturally at your sides.
- Keep shoulders retracted and chest up

# Posture is important. Keep the natural curves to your spine with head and shoulders back.

If you have to stand for long periods of time, shift your weight from your toes to your heels or from one foot to the other. Although good posture should be natural, you might feel wooden or stiff at first if you've forgotten the sensation of sitting and standing up straight. The key is to practice good posture all the time.



a. Lordosis: increased anterior lumbar curve from neutral

b. Kyphosis: increased posterior thoracic curve from neutral

c. Flat back: decreased anterior lumbar curve

d. Sway back: decreased anterior lumbar curve and increased posterior thoracic curve from neutral

e. Scoliosis: lateral spinal curvature often accompanied by vertebral rotation

## Details: Good sleeping posture

- If you sleep on your side, place a pillow between your knees to help keep your hips level and make sure your head is supported and not bent. For optimal results, your nose should be parallel to the ground when you lay on your side.
- If you sleep on your back a pillow underneath your knees can help remove pressure from your lower back. Make sure your chin and nose are parallel to the ground.
- Try to avoid sleeping on your stomach since this can cause hyperextension of your back without you noticing it.
- Be careful waking up - Sitting up too quickly and hopping out of bed can cause strain on your entire body, including your lower back. Instead, start by rolling over to the side of your bed. Tighten your abdominal muscles and use an arm to lift yourself up as you drop your feet to the floor.
- Most mattresses and box-springs should be replaced between 7 and 15 years after purchase. Look for a mattress that supports the curves in your back and is neither too hard nor too soft. Make sure you regularly flip your mattress over and around (from end to end) to help reduce sagging. Do not sleep for hours in a reclined position.

Good sleeping posture is important to back health. Please read all details.

### Sleeping Positions for Back Pain

#### Best: Sleeping on Your Back

Distributes weight evenly on spine  
Put pillow under knees to maintain natural spine curve



#### Decent: Sleeping on Your Side

Try switching sides every night  
Put pillow under bent legs for best spinal curve



Some benefit from a small pillow at navel level

#### Worst: Sleeping on Your Stomach

Flattens natural curve of spine  
Puts strain on back & neck muscles



# Details:

## Do not Smoke for Back and Overall Health

People who smoke are also much more likely to have back pain than people who don't smoke. This is because the nicotine and other toxins from smoking can keep spinal discs from getting all the nutrients they need from the blood, making disc injury more likely.

## Stress and Your Back

Some people hold stress in their muscles, specifically their back and neck. Stress and low back pain can create a vicious circle. You have back pain, and you begin to worry about it. This causes stress, and your back muscles begin to tense. Seek out strategies to reduce and/or manage stress in your life like time management and breathing techniques.

## Watch Your Weight

Extra body weight, especially around the waist, may put strain on your back. Try to make your weight loss journey a healthy one by not following fads and very restrictive practices rather follow accepted healthy suggestions and that you can practice the rest of your life.

Good health habits are important to back health.  
**DO NOT SMOKE**  
**TRY TO REDUCE STRESS**  
**WATCH YOUR WEIGHT**  
Please read all details.

**mi Minnesota SPINE INSTITUTE**

**WHAT DAILY HABITS ARE HURTING YOUR BACK?**

**POOR EATING**  
Eating healthy is a great way to manage weight—and pain. Being overweight puts extra pressure on your joints and nerves. Try incorporating more fruits, veggies, whole grains, and healthy fats into your diet for a healthier, pain-free back.

**HIGH HEELS**  
This is probably no surprise, but high heels force your back to arch. These stylish shoes throw off your balance and make the muscles in your back work overtime.

**POOR POSTURE**  
Poor posture will really do a number on your back. If you are stuck at a desk all day, get up and take a break to do some stretches.

**NO YOGA**  
Yoga may ease back pain better than exercises like running or strength training because yoga decreases your stress level. Through different poses and breath work, yoga can help your mind—and your back—feel at ease.

**OLD MATTRESS**  
If you wake up with back pain every morning, it's probably a sign for a new mattress. Old mattresses can cause aches and pains because they don't offer the proper support.

[www.MinnesotaSpineInstitute.com](http://www.MinnesotaSpineInstitute.com)

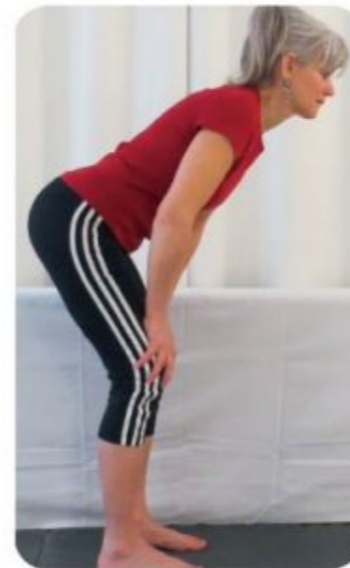
## Details:

### How to Perform Daily Tasks Safely

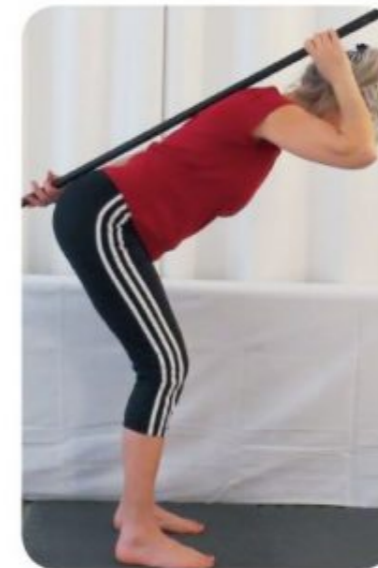
- Don't strain to reach.
- Instead of pushing and pulling the vacuum back and forth, walk it all the way across the room and back. Stand up straight as you move.
- When Driving the car in, sit first and then turn so that you bring both legs into the car together. When you get out, do the reverse. Pull your seat forward so that you can comfortably reach the pedals and the steering wheel. Your knees should be bent so that you don't have to lift your whole leg to step on the brake. You may find driving more comfortable with a small pillow or rolled-up towel behind your lower back.
- For chores that require you to stand in one place, you might feel better with one foot slightly higher than the other.
- Try to avoid picking up children while you're standing up. If you must, remember to lift properly. Better yet, find a place to sit down and let the child come into your lap.
- Many gardening chores usually require bending forward. Whenever you can, sit, squat, or get on your knees instead.
- Taking in all the groceries at once may save time, but it won't help your back.

In closing try to perform daily tasks safely. When you can stay to spare your spin by standing and walking. Walking is very protective to the back. **See details.** Remember when lifting hinge at the hips keeping back locked in neutral and keep abdomen braced.

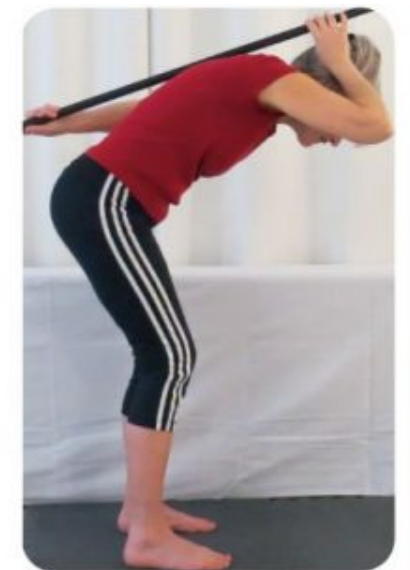
Do you keep 3 points of contact when lifting



Hip hinge



Hip hinge training, correct neutral spine



Hip hinge not correct, spine is rounded, not in good neutral position

COURTESY SHARRON STEEVES, PHYSIO FITNESS