

# Back Talk

An owner's manual for backs



## About WorkSafeBC

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WorkSafeBC (the Workers' Compensation Board) is an independent provincial statutory agency governed by a Board of Directors. We are funded by insurance premiums paid by registered employers and by investment returns. In administering the *Workers Compensation Act*, WorkSafeBC remains separate and distinct from government; however, we are accountable to the public through government in our role of protecting and maintaining the overall well-being of the workers' compensation system.

WorkSafeBC was born out of a compromise between B.C.'s workers and employers in 1917 where workers gave up the right to sue their employers or fellow workers for injuries on the job in return for a no-fault insurance program fully paid for by employers. We are committed to a safe and healthy workplace, and to providing return-to-work rehabilitation and legislated compensation benefits to workers injured as a result of their employment.

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The WorkSafeBC Prevention Information Line can answer your questions about workplace health and safety, worker and employer responsibilities, and reporting a workplace incident. The Prevention Information Line accepts anonymous calls.

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Many publications are available on the WorkSafeBC website. The Occupational Health and Safety Regulation and associated policies and guidelines, as well as excerpts and summaries of the *Workers Compensation Act*, are also available on [worksafebc.com](http://worksafebc.com).

Some publications are also available for purchase in print:

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# Introduction

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Our back is one of the strongest anatomical structures of our body. Despite this, about 80% of the population will experience back pain at some stage in their lives.

Even though back pain is common and may cause some people considerable pain, serious or permanent damage is rare. Fear and misunderstanding are two important factors that can delay recovery. The information and advice in this booklet will help you understand the structure of the back and show you how to care for yourself during episodes of back pain.

This booklet is not meant to replace your health professional. It is particularly important to seek professional advice if you experience any of the warning signs described on page 10.

# Understanding back pain

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In most cases, back pain is not caused by serious injury or disease. People who remain active and get on with their lives despite feeling back pain tend to do better than people who avoid physical activity. If you have back pain, you can expect things to improve within a few days or weeks. However, some back pain may last longer.

Also, when you've had one episode of back pain, you may have another in the future. This does not mean it is a serious problem. Episodes of back pain generally settle down with time, and in between episodes life is normal.

You may need to rest for the first day or two, but try to resume your daily activities as soon as you are able. In the past, back pain was treated with long periods of bed rest, but bed rest has been found to be harmful to people with back pain. Staying active, even while experiencing some pain, will help keep you fit and speed up your recovery.

Surgery is rarely required for back pain. X-ray, CT, or MRI scans are not typically needed to understand back pain. They may be useful if someone is considering surgery, but clinical examination is the best step to decide if surgery should even be contemplated.

Some of the terminology used in medical reports may sound scary. For example, degeneration is a very common finding, but it isn't as bad as it sounds. Degeneration of bone and tissue is a normal change that comes with age. Discussing these medical terms with your doctor will help you understand what they mean.



## How can I prevent my back pain from becoming chronic?

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The risk of back pain becoming chronic is linked to the way people view their pain and the extent to which they remain active. For example, if you view back pain as a serious medical condition, you are actually increasing your risk of developing chronic pain. On the other hand, if you think your back pain will get better, even though it's a nuisance, you reduce your risk of developing chronic pain. Hurt does not always mean harm.

One of the most important things to do is to play an active role in your recovery, rather than looking for a prescription or specific treatment as the answer.

People who are off work for more than a month increase their risk of chronic pain and disability. People who reconnect with work, even if they have to modify their activities for a while, are more likely to recover. If you notice you are starting to withdraw from others or are feeling blue, this is a warning that you could be at risk of developing chronic pain. If you cannot manage these feelings on your own, talk to a friend or a professional.

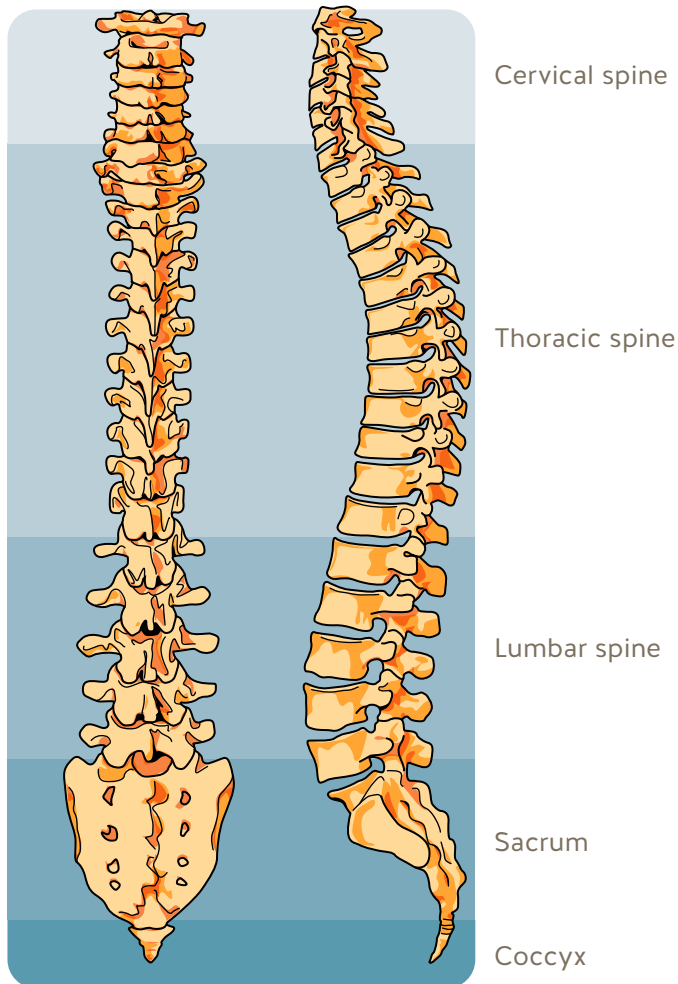
# Understanding the structure of your back

## Spine

The main functions of the spine are to

- Support the trunk and the head
- Allow flexibility of the body
- Protect the spinal cord

### Back and side view of the spine



## Vertebrae

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The spine is composed of boney blocks called “vertebrae” that are stacked on top of one another and separated by shock-absorbing discs. The neck has seven vertebrae. The chest has twelve vertebrae, each carrying two ribs. There are five vertebrae in the low back or lumbar area. The remaining fused vertebrae create a solid base called the “sacrum” and the “coccyx” or tailbone.

## Discs

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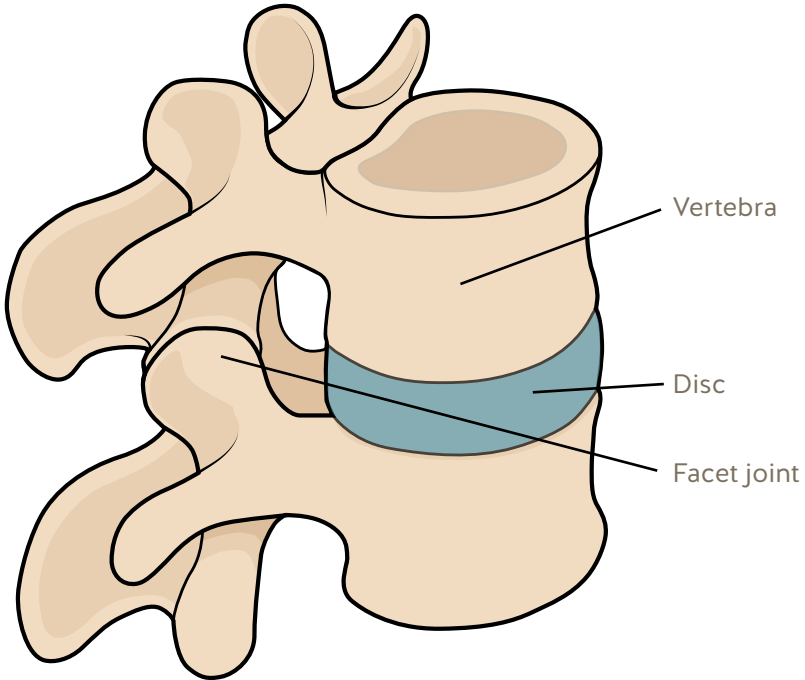
Discs act as cushions between the vertebrae. They have a very strong, tough outer casing with a firm jelly-like substance inside. Discs are firmly attached to the vertebra above and below and can withstand considerable compression. A disc can never slip out but can be ruptured, causing the jelly-like substance to protrude. As people get older, their discs become degenerated. This is a normal aging process, and for most people it does not cause any problems.

## Facet joints

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Facet (or apophyseal joints) connect adjacent vertebrae and allow the vertebrae to move on each other.

### Lumbar disc and facet joint

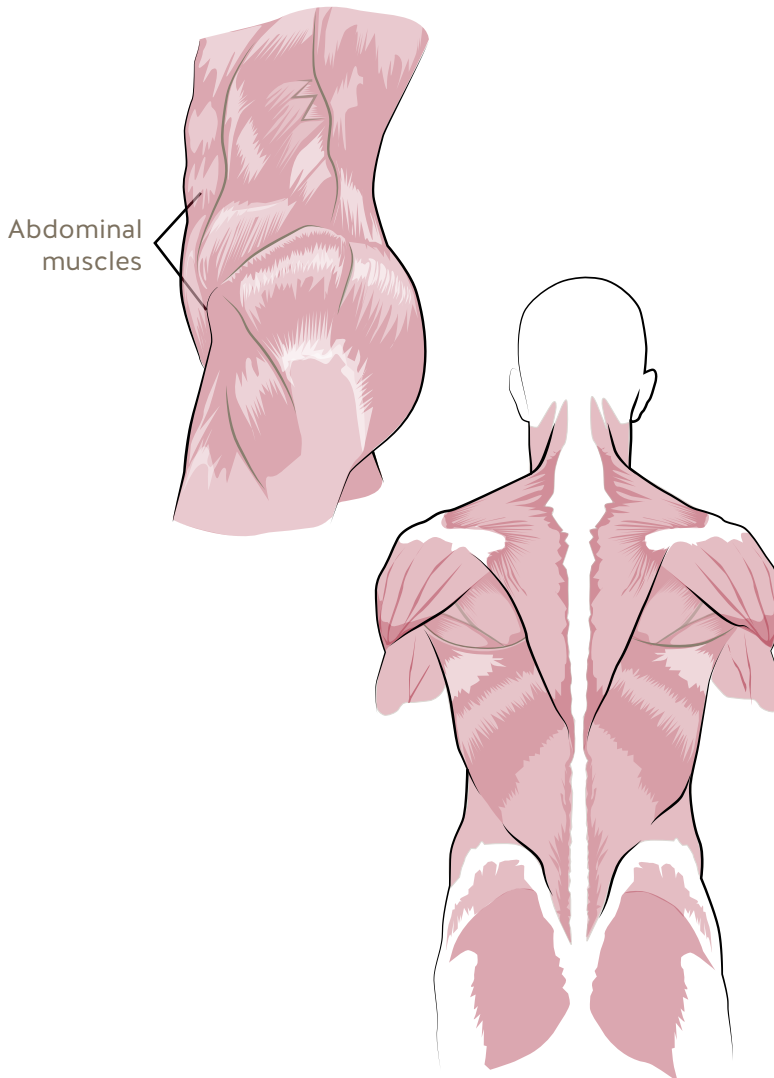


## Muscles

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Back, abdominal, and buttock muscles add stability to the spine and help maintain proper posture.

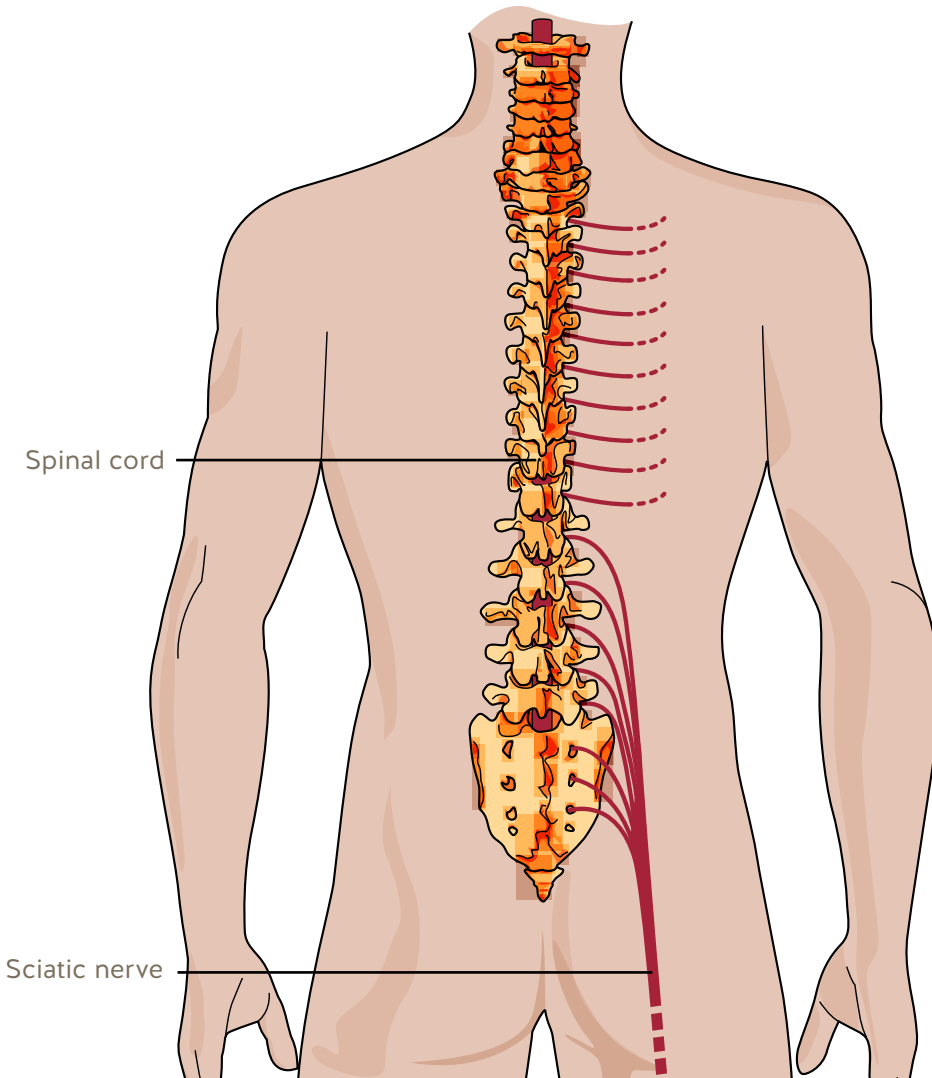
### **Muscle systems of the back, buttocks, and abdominals**



## Spinal cord

The spinal cord is the bundle of nerves that leads from the base of the brain to the level of the second lumbar vertebra. The lumbar spinal nerves join to form the sciatic nerves, which run down the back of the legs.

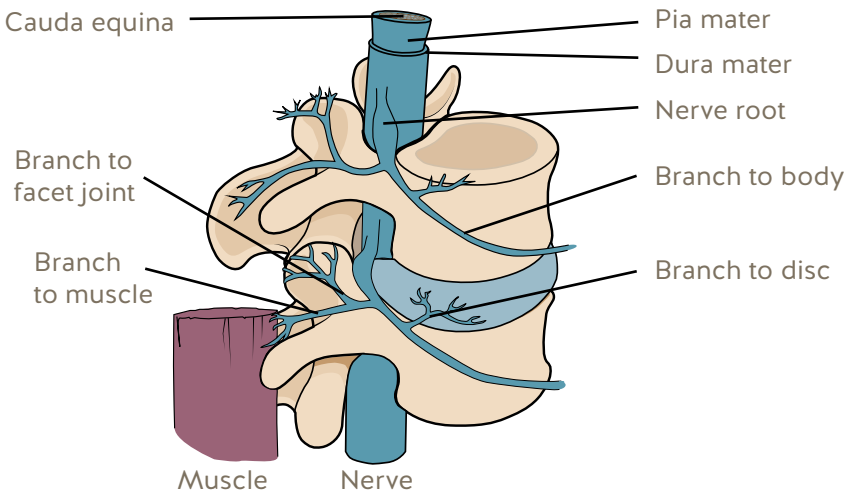
### Spinal cord



## Spinal nerves

Between each two vertebrae, a spinal nerve branches out from the central spinal cord and carries commands to the organs and muscles. These nerves also send messages relating to touch, temperature, and pain to the spinal cord and the brain. If a nerve is pinched by a protruding disc, you may get leg pain.

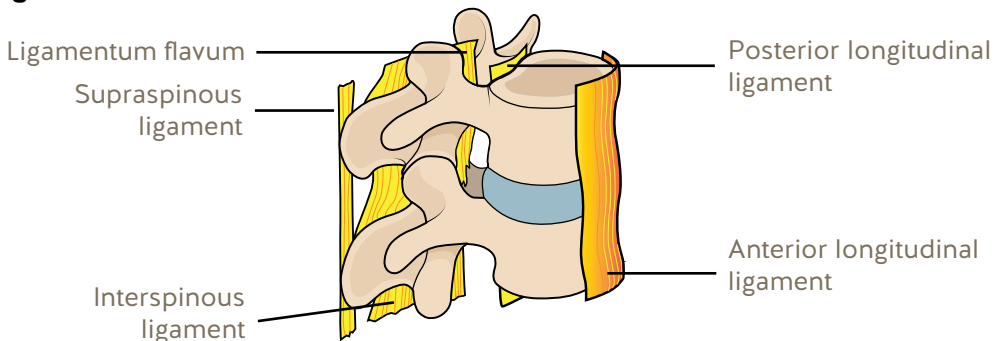
### Spinal nerves



## Ligaments

Ligaments are bands of tough tissue between the bones that keep the vertebrae in good alignment and help keep the spine stable.

### Ligaments



# Back pain

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Most back pain does not indicate any serious injury or damage. Back pain may be called a sprain or strain. Often we don't know the cause. What we do know is that most back pain improves within a few days or weeks given the proper care.

## Warning signs

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There are a few warning signs that you should pay attention to. Consult your doctor as soon as possible if you have back pain **and** develop any of the following signs or symptoms:

- Pain that spreads down your leg, especially below the knee, and is accompanied by weakness, tingling, or numbness
- Severe pain that worsens over several weeks
- Problems with urinating or bowel movements
- Numbness, especially in the area around your anus or groin
- Fever
- Unintended weight loss

## When back pain occurs

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What you need to do depends on how your back feels. At night you may stiffen due to inactivity and feel worse in the morning. You may need to get up a little earlier to give you more time to work out this stiffness before starting your regular morning activities.

Here are some things you can do:

- Use some measure to control pain.
- Modify your activities for a short time, if necessary.
- Most importantly, stay active and get on with your life.

If you think back pain is caused by your work, the Occupational Health and Safety Regulation requires you to report it to your supervisor or first aid attendant.



## Measures to control pain

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### **Painkillers**

Acetaminophen (for example, Tylenol) is the simplest and safest painkiller. You can also add anti-inflammatory medication such as ibuprofen (for example, Advil) or aspirin.

These simple, over-the-counter painkillers are often the most effective for back problems. It is important to start with the full recommended dose and take them regularly, every 4–6 hours, as you need them. It is important not to wait until your pain is out of control. You may need to take the painkillers for a few days, or you may need to take them for a week or two.

### **Heat or cold**

Heat or cold may help relieve pain and relax muscles.

In the first 48 hours, try a cold compress on the sore area for 5–10 minutes at a time. You don't need a special cold pack – a bag of frozen vegetables wrapped in a towel can do the trick.

Some people prefer heat such as a hot water bottle, a bath, or a shower.

### **Massage**

Massage is one of the oldest treatments. Many people find gentle rubbing eases the pain and relaxes muscles.

### **Spinal manipulation**

Spinal manipulation, such as that provided by chiropractors, osteopaths, physiotherapists, or other qualified health care practitioners, may help early on with back pain. The benefits of spinal manipulation should be felt within a few sessions. If you do not feel better after a couple of weeks, you may not be one of the people helped by manipulation.

### **Other treatments**

Many other treatments, such as electrical stimulation, acupuncture, or alternative medicine, may be suggested to treat your back pain. There is no quick fix for back pain. If you can stay active, you'll have a much better chance of recovery.

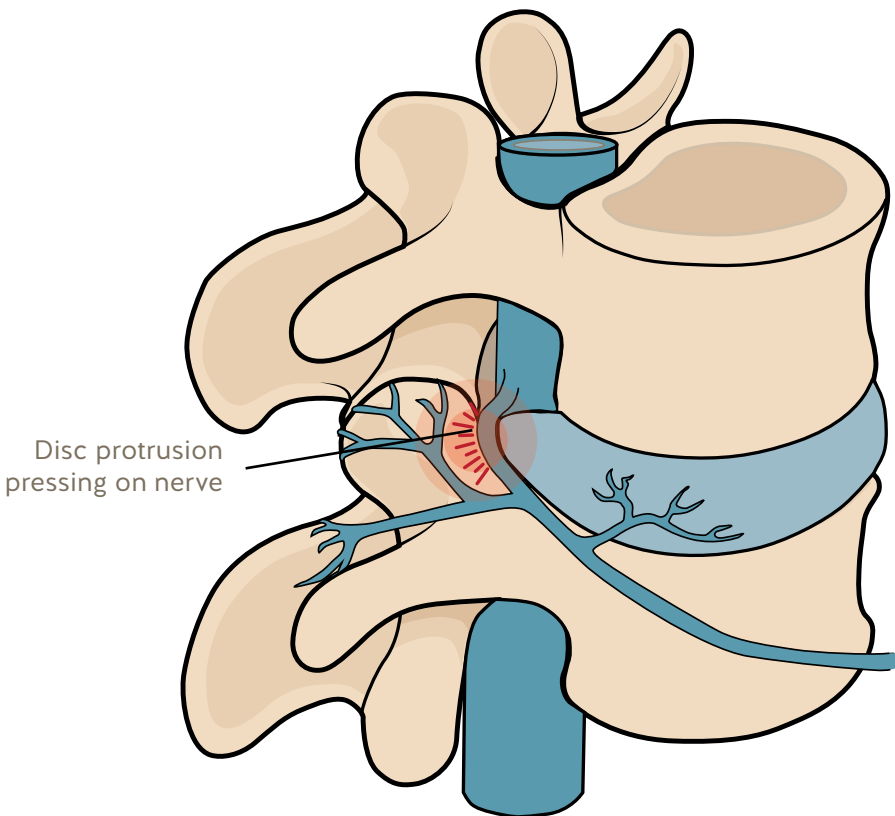
# Disc injuries

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Very few back problems are the result of disc injuries; however, when a disc is strained beyond its limit, the outer casing can tear or rupture. If the inner substance touches a spinal nerve, pain may be felt in the leg. This leg pain is called *sciatica*.

Most disc problems improve without surgery.

## Disc protrusion

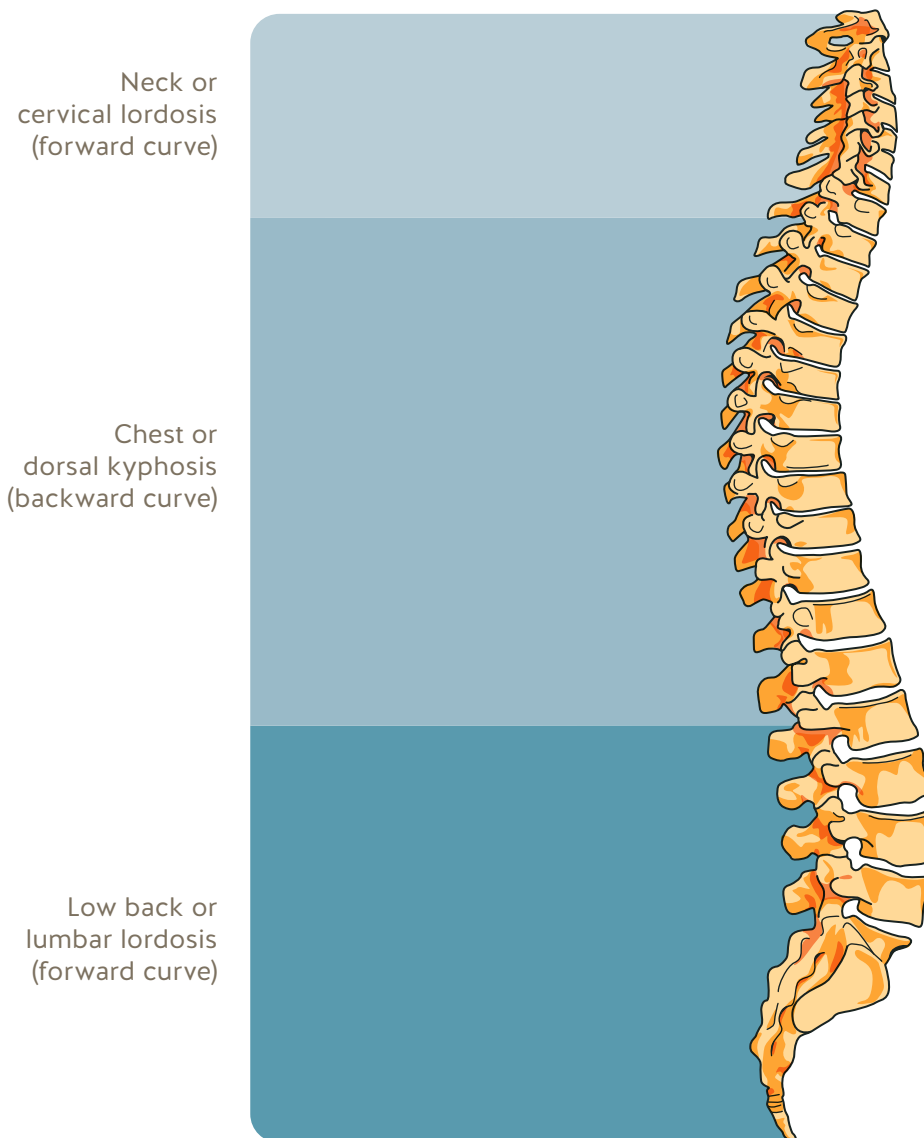


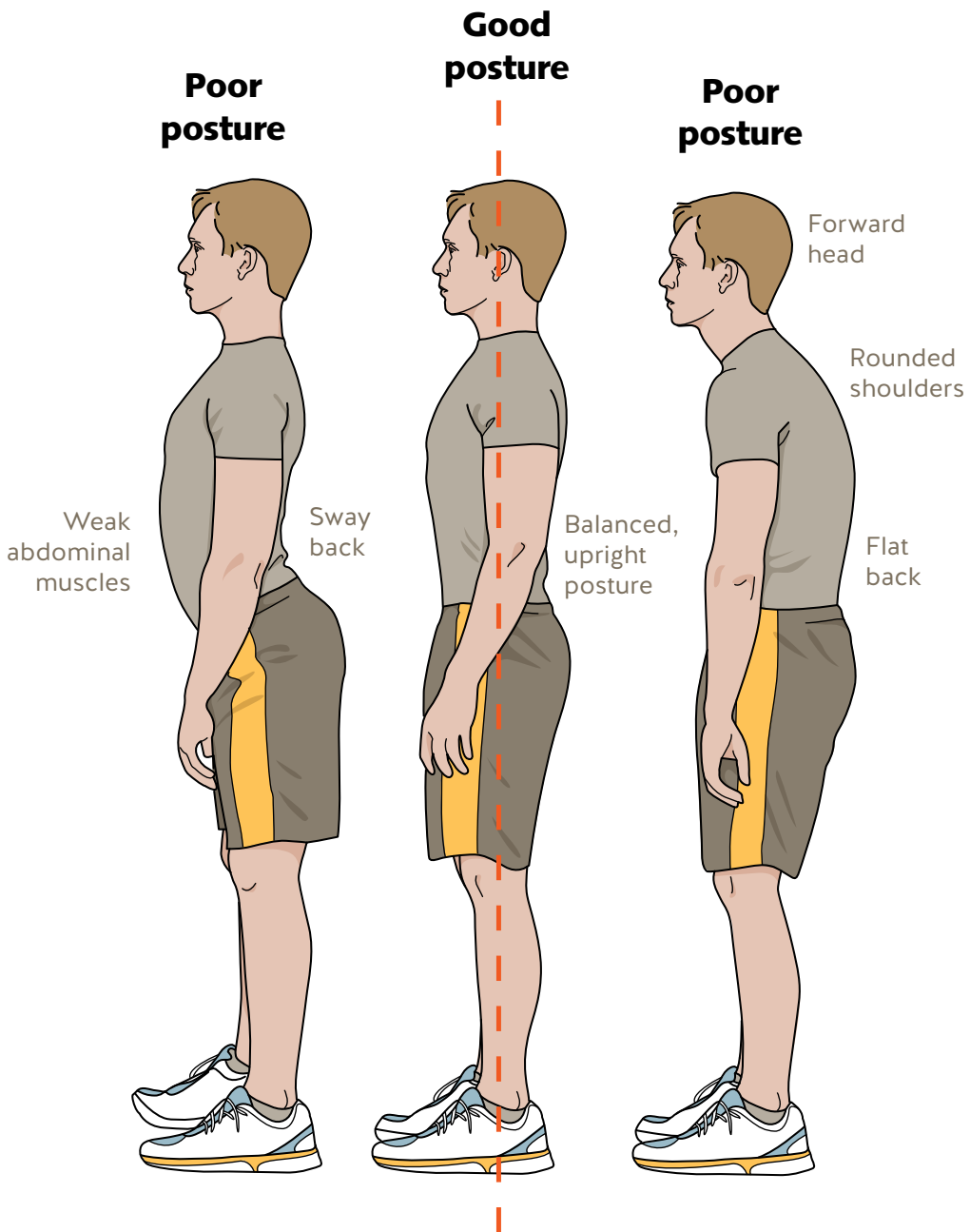
# Posture and a healthy back

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Proper spinal curves produce proper posture, which will result in comfort. A normal spine is shaped as a double S-curve with two curves to the front and one to the back. These curves balance each other so that the head is supported on a pillar.

## Proper spinal curve





## Good posture—standing

Good posture—when you are standing—is straight vertical alignment of your body from the top of your head, through your body’s centre, to the bottom of your feet.

If you have back pain from standing in one position for too long, try any of the following for relief:

- Walk around from time to time.
- Raise and rest one foot on a block about 15 or 20 cm (6 or 8 in.) high.
- Crouch periodically to relax your back.
- If you have been bending forward, stretch and bend backwards.



## Good posture—sitting

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You might be more comfortable with your pelvis in a neutral position. To do this, the spine should be supported along its natural curve, allowing the muscles to relax. The feet should be supported. The height of the seat should place the knees level with, or slightly higher than, the hips. Stand up regularly (at least every 45 minutes) and walk around.

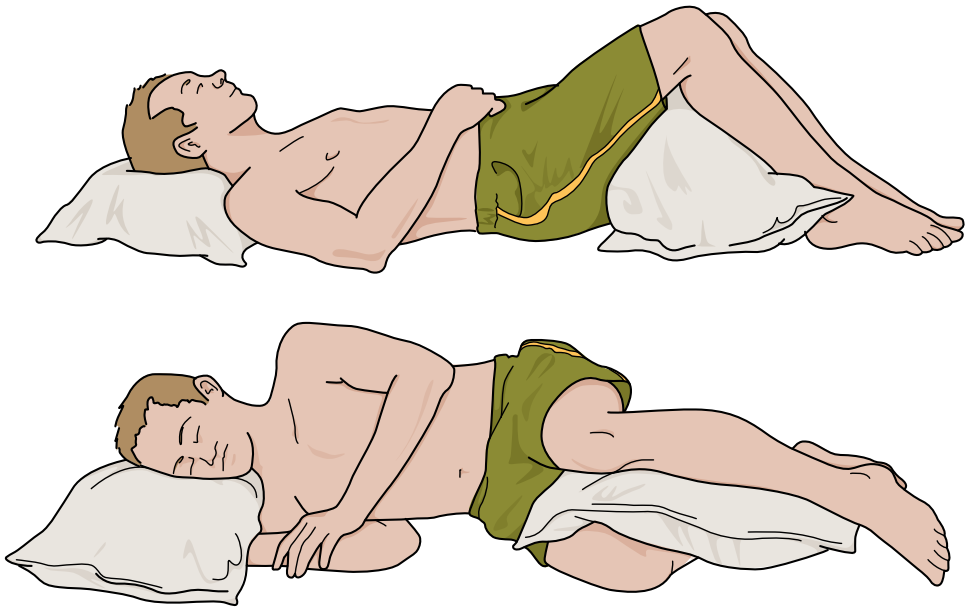
If you sit at a computer, try raising the screen to eye level and adjusting the chair so you don't have to lean forward.



## Good posture—lying down

Lying on your side with hips and knees bent may relieve back pain. One or both legs may be bent. If only the top leg is bent, place a pillow under the knee to prevent twisting. If lying on your back with your legs straight leads to low back pain, try bending your knees.

There is no perfect mattress or pillow that will resolve back pain. A good mattress for you is one that allows you to sleep well and awake refreshed.



There is no one perfect posture. You may find it helpful to change your posture frequently and determine for yourself the most comfortable position.

# Safe bending, lifting, and carrying

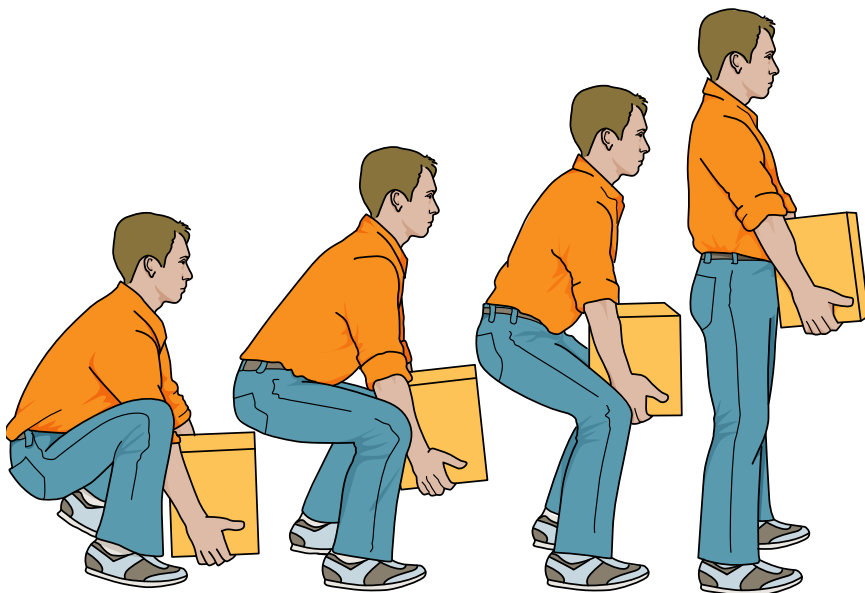
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It is particularly important to stay healthy and prevent injury to the lower back when you are on the job. Good ergonomic design in the workplace is important, as are the rules for safe lifting and carrying. Always follow these rules, even for lifting light objects:

- Place your feet apart for good balance.
- Bend your knees.
- Hold the object as close to your body as possible.
- Lift smoothly and slowly.
- Pivot with your feet; don't twist the back.
- Push, rather than pull a load.
- Share the load; work with a partner.
- Get mechanical assistance for heavy loads.

Know your own strengths and limitations. Use proper lifting, bending, and sitting techniques on the job to help avoid low-back injuries in the workplace.

## Safe lifting technique





# Exercise and your back

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Many people who have back pain are afraid that any exercise will cause further damage. The fact is, most backs benefit from exercise. Strong, flexible muscles are essential to a healthy back. They support the spinal column and determine posture, which is the key to a healthy back. If your muscles are weak or tight, back injuries are more likely, and recovery is more difficult.

Exercise is the only way to keep your muscles healthy. Exercise to

- Build strength and endurance for more efficient support and better posture
- Stretch shortened muscles that are causing imbalances
- Maintain mobility of joints

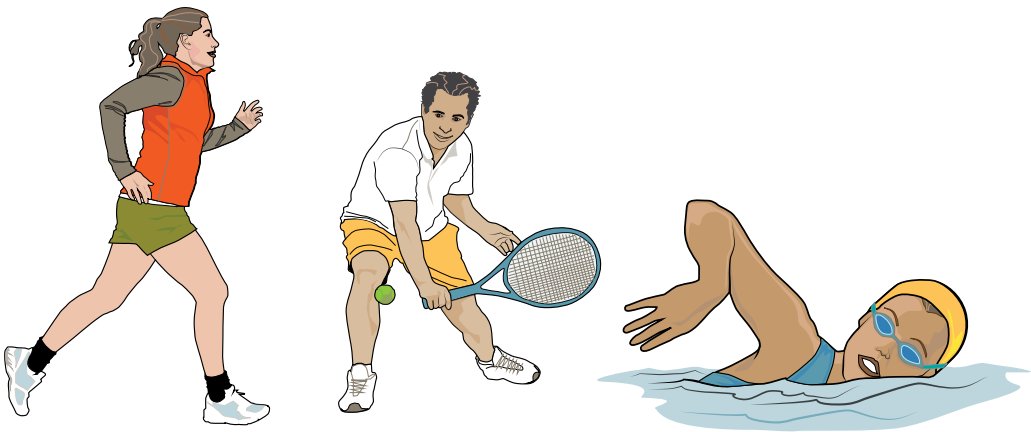
When you have an episode of back pain, you may find exercise more difficult. Try to stay as active as possible to promote recovery from your back pain episode.



Stay fit by exercising regularly to maintain a proper balance of flexibility, strength, and endurance. On the following pages, you will find exercises designed to improve and maintain the overall fitness of your back. Cardiovascular exercise, such as walking, cycling, or swimming, has been shown to help control low back pain. This information is not intended as a substitute for medical attention. If you are receiving professional care, do only the exercises you have been instructed to perform.

At the end of this book is a chart for your health professional to write recommended exercises and the number of repetitions you should do.

- Start with five repetitions of each exercise.
- Progress slowly to 10 repetitions, but use your own judgment and don't advance too quickly.
- A minimum of 20 minutes should be set aside daily for doing your exercises.
- If the exercises cause an increase in pain, consult your health professional.



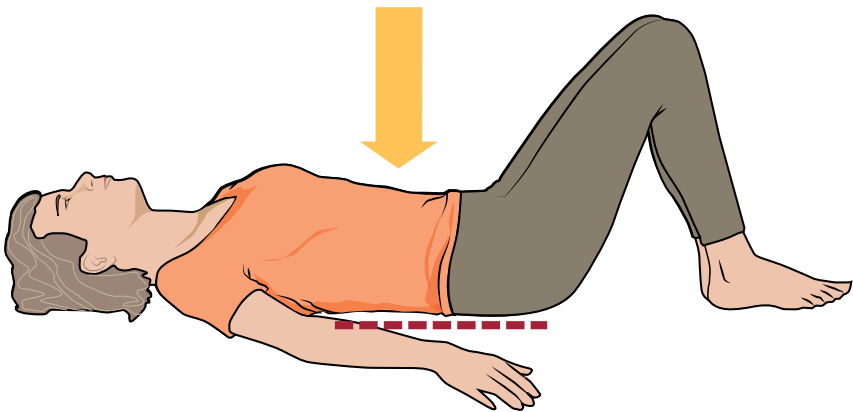
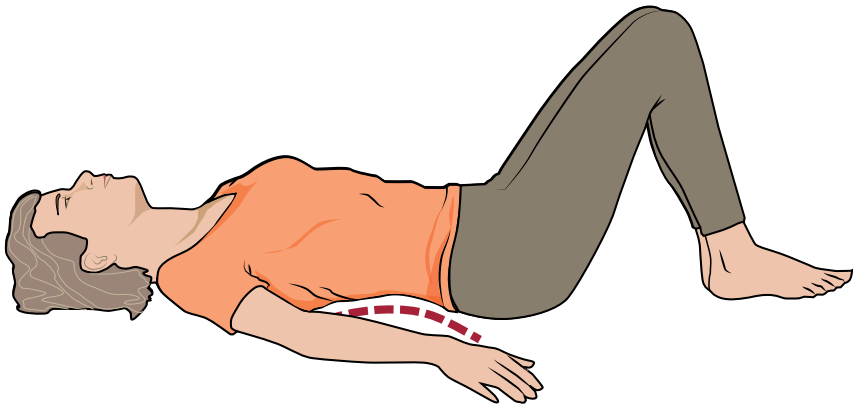
# Exercises

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## 1. Pelvic tilt

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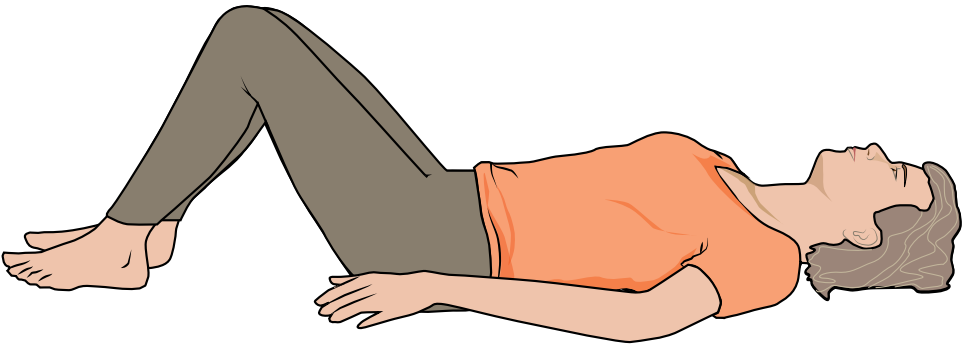
Lie on your back with your knees bent, feet flat on the floor, and arms at your sides. Tighten your stomach muscles and flatten the small of your back against the floor without pushing down on the feet. Hold for five seconds, and then slowly relax.



## 2. Knee to chest

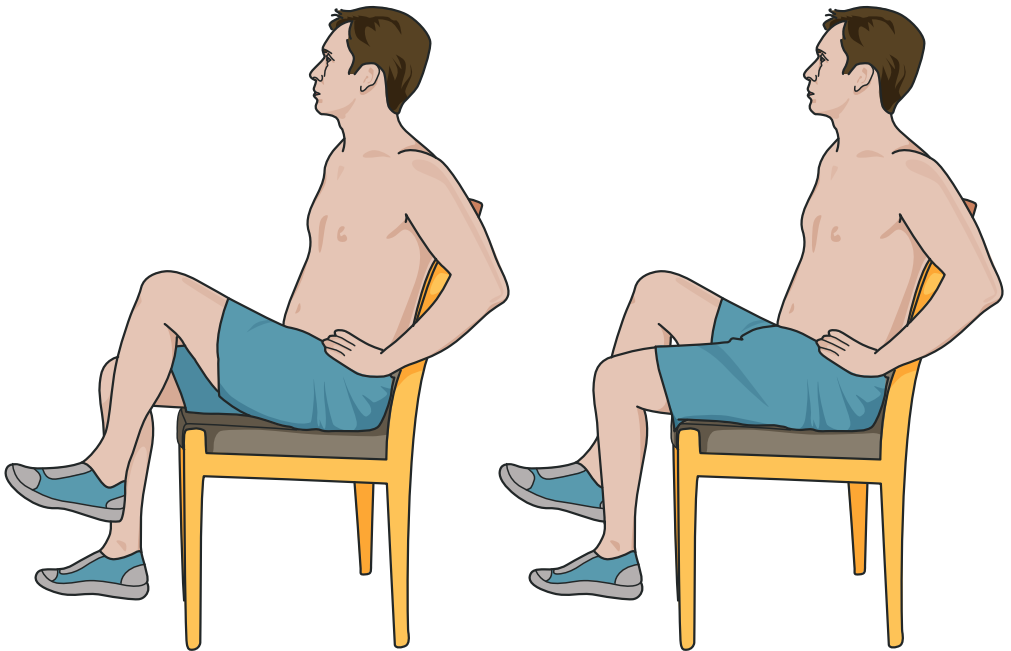
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Lie on your back with your knees bent, feet flat on the floor, and arms at your sides. Grasp your right knee and gently pull toward your right shoulder. Hold for five seconds. Return to the starting position and repeat with the left leg. This is one repetition.



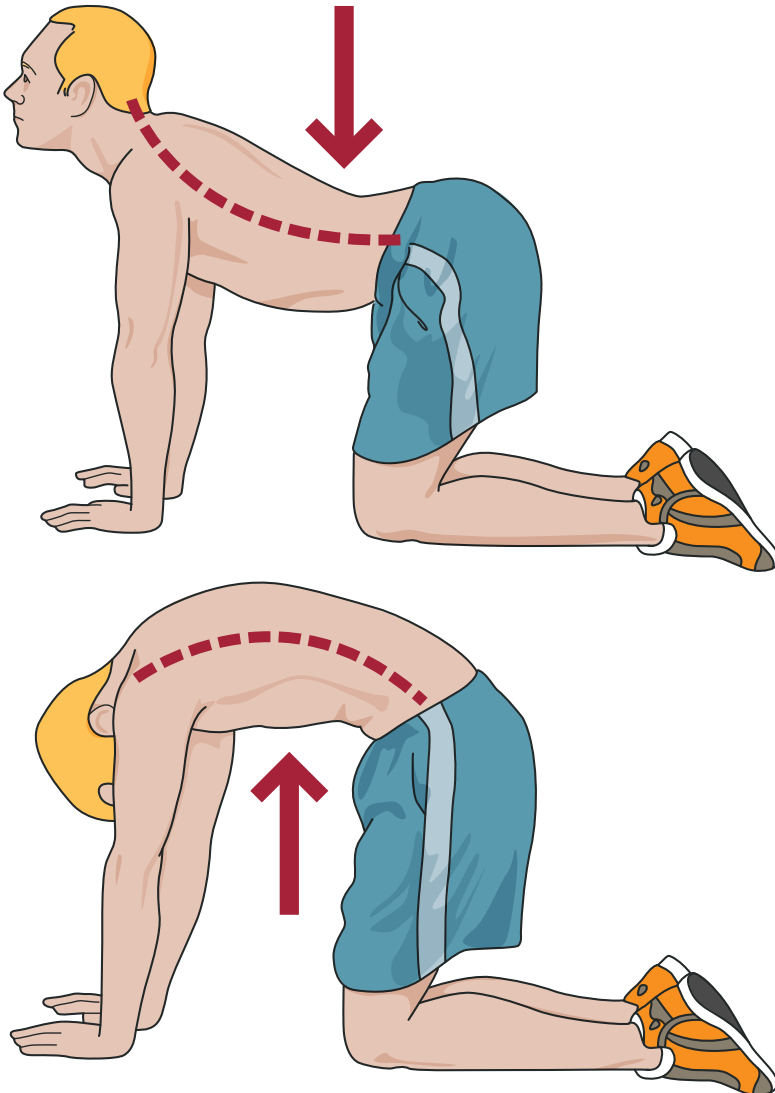
### 3. Knee raises

Sit upright on the edge of a chair with your back in a neutral posture, maintaining the curves of the spine. Tighten your abdominal muscles to brace your spine. Slowly raise one knee up and move your foot off the floor without moving the rest of your body or pushing down on your other foot. Hold for about five seconds before slowly returning your foot to the floor. Repeat the exercise using the opposite leg.



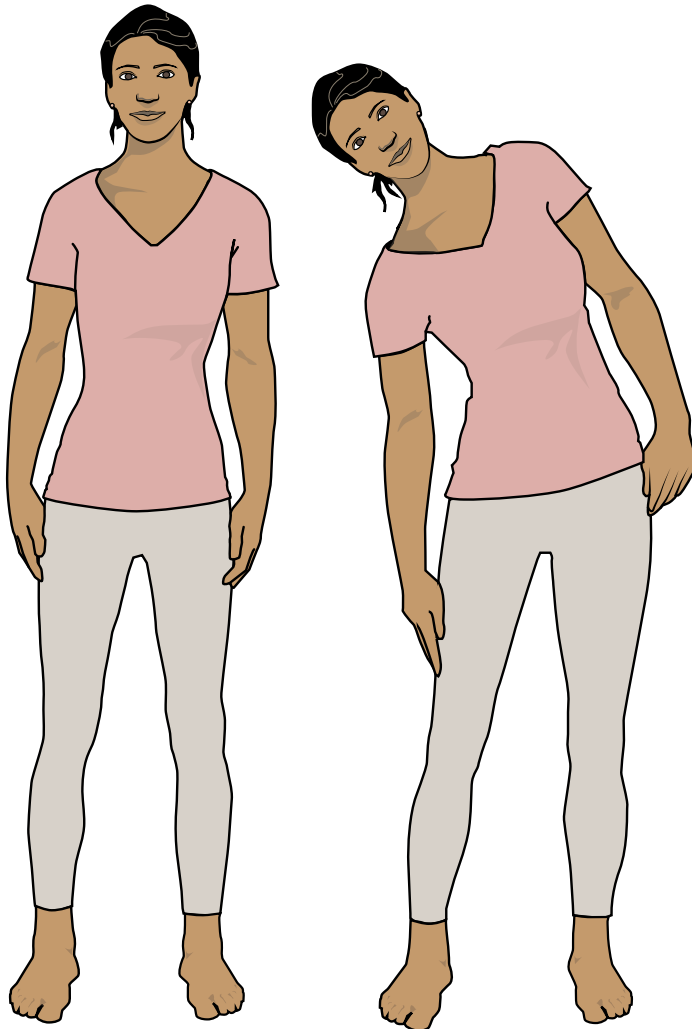
## 4. Cat stretch

With hands under your shoulders and knees under your hips, tighten your abdominal muscles to brace your spine. Keeping your neck relaxed, move your back down and up in a comfortable range of motion.



## 5. Side bending

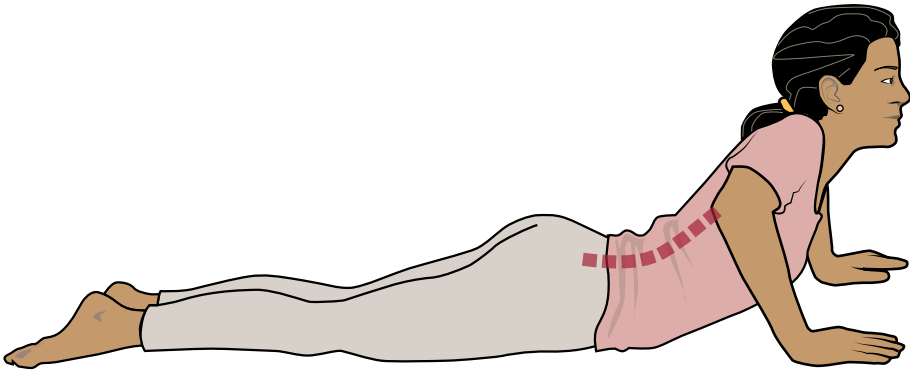
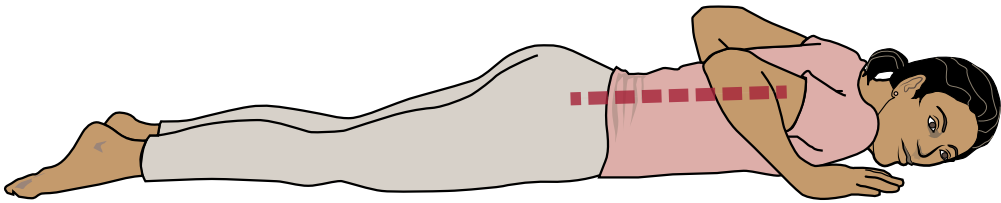
With your feet shoulder width apart, drop your head and shoulder while sliding your hand down your leg. Tighten your abdominal muscles and bend sideways slowly, as far as you can. Hold for five seconds and repeat on the other side. This is one repetition.



## 6. Trunk extension

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Lie on your stomach. Push up with your arms. Keep your hands on the floor. Let your stomach relax and your back sag. Be careful not to bend back too far and don't over extend your neck. Hold for five seconds before returning to the starting position.

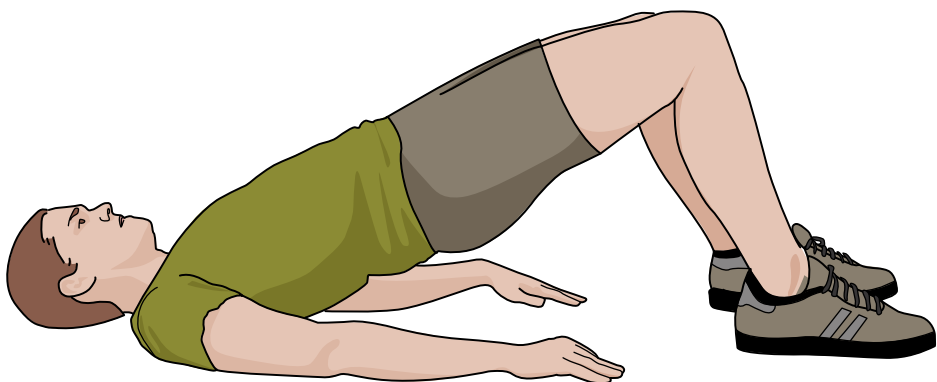
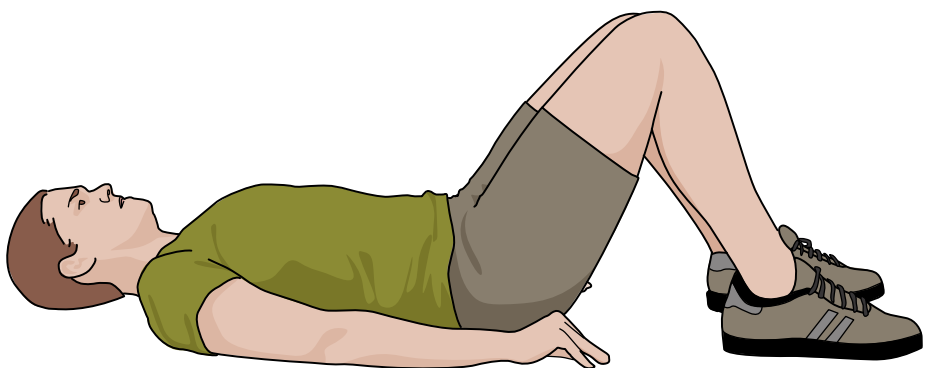




## 7. Bridging

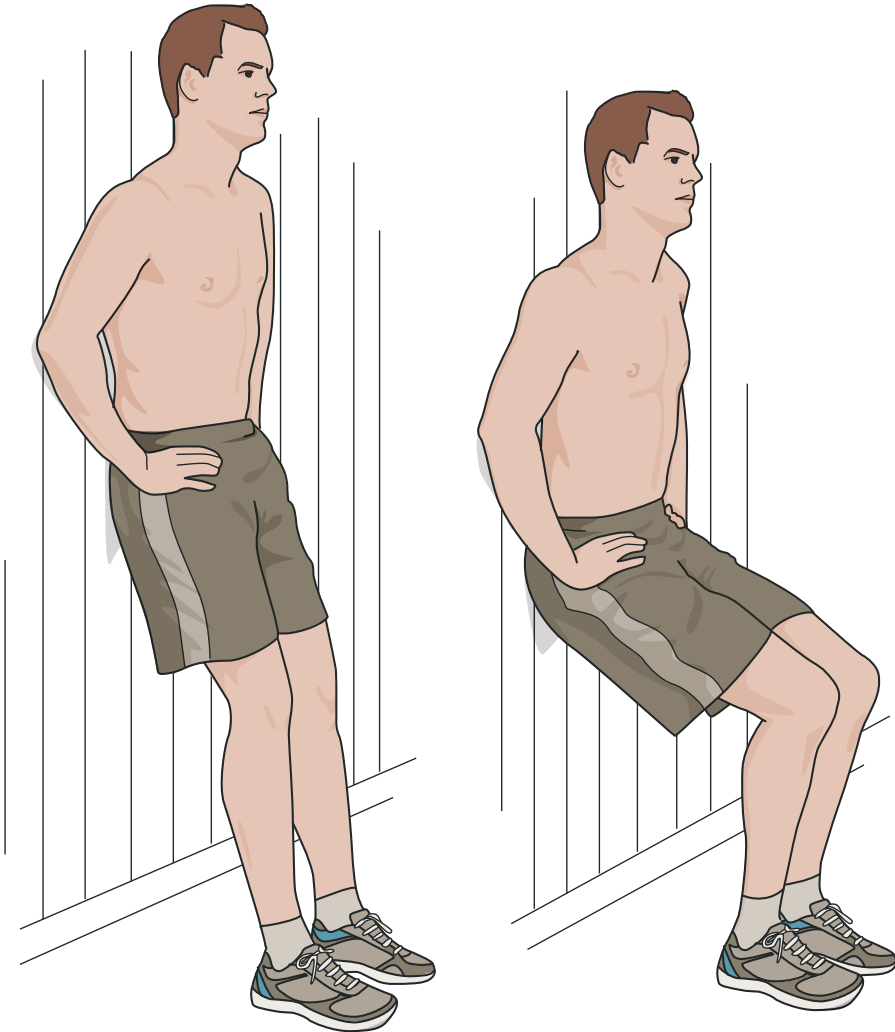
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Start with your back, shoulders, and arms flat on the floor and your knees slightly apart. Squeeze your buttocks together and slowly raise them off the floor, keeping your abdominal muscles tight. Slowly return to the floor.



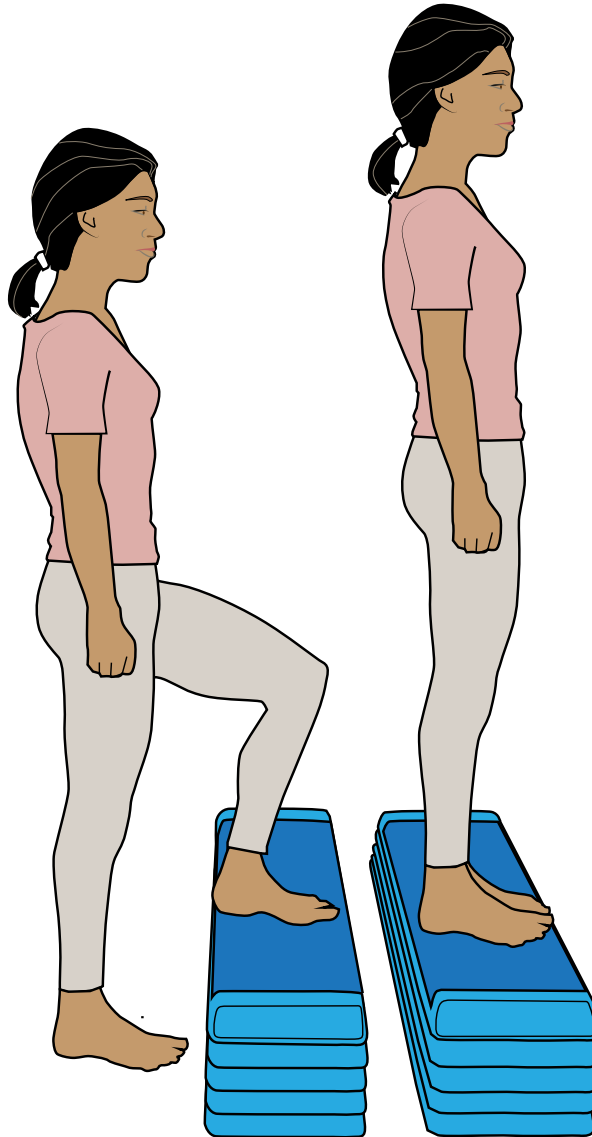
## 8. Wall squat

Lean against a smooth wall with your feet pointing straight ahead, heels about 45 cm (18 in.) from the wall. Slowly slide down the wall until your knees are bent to 70°. Hold for five to ten seconds and slide back up. As you become stronger, increase the time you hold the squat.



## 9. Step ups

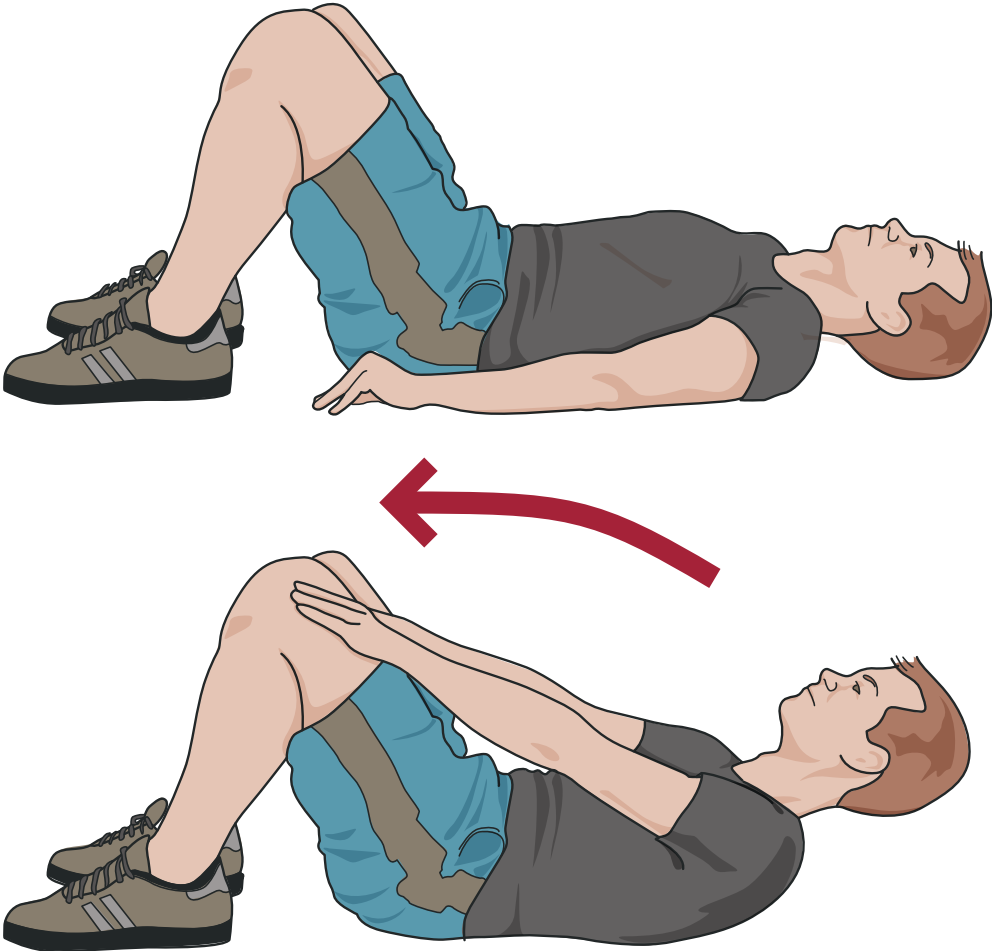
Stand facing a 20- to 45-cm (8- to 18-in.) step stool. Step up with your left foot, and then slowly step down with your right foot. Try not to 'jump'. Perform a set starting with one foot, then another by starting with the other foot.



## 10. Partial sit-up

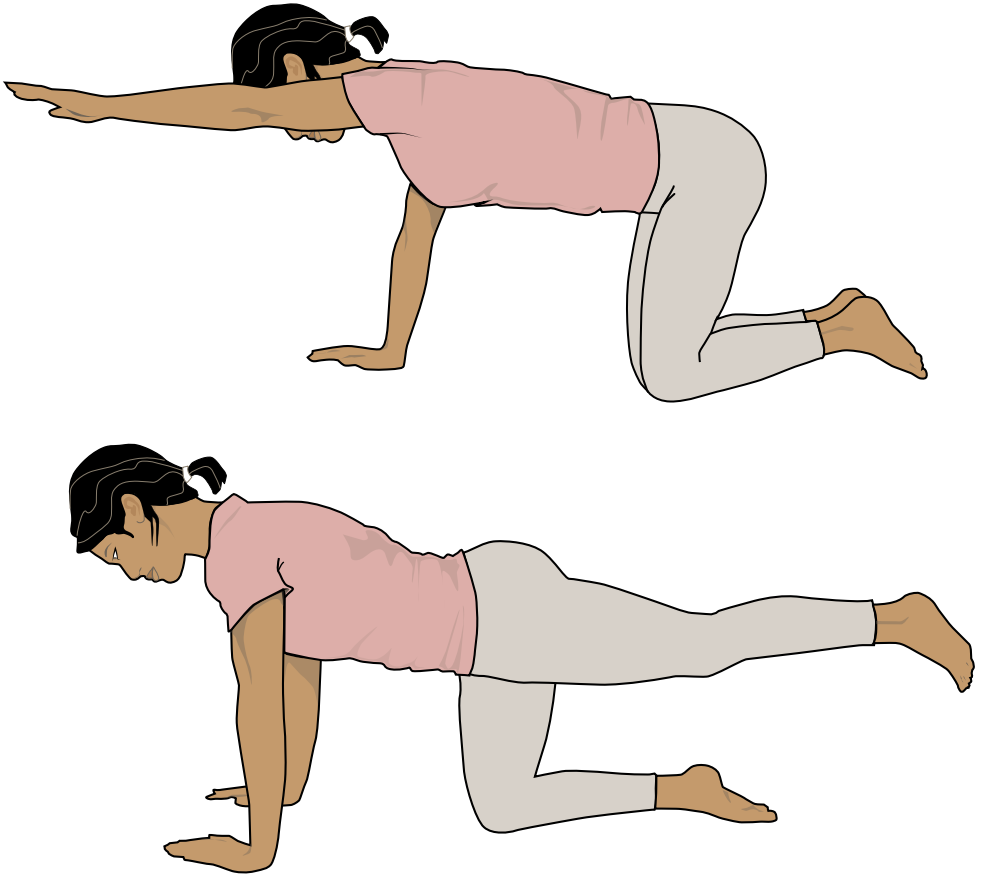
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Lie on your back with your knees bent, feet flat on the floor and arms at your sides. Slowly raise your head and shoulders off the floor reaching your hands to your knees. Breathe normally. Slowly return to the floor.



## 11. Bird dog

With hands under your shoulders and knees under your hips, tighten your abdominal muscles to brace your spine. Slowly raise and lower your arm while keeping your back still. Repeat the movement and then switch sides. Slowly raise and lower your leg while keeping your back still. Repeat the movement and then switch sides. Progress to doing these exercises together when you are able to consistently control movement in the back.



# Tips for your back

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## Healthy diet

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Excess weight places an unnecessary strain on the spine. The remedy includes developing good eating habits that provide you with enough nutrition without causing you to put on extra weight. Have your doctor or dietitian recommend a proper diet that suits your needs.

## Recovery from back injuries

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During an episode of back pain, what you do early on is very important. Resting more than a day or two usually does not help and may prolong your recovery. If you have back pain, you may want to take a hot bath or shower followed by stretching exercises. Find the most comfortable position. If you find heat or ice helpful, don't apply it for more than 20 minutes at a time.

When the pain starts to ease, do the following:

- Stretch gently.
- Walk around the room.
- Walk around the house.
- Walk around the block.
- Keep moving a little further every day.
- Swim, cycle, and exercise your back.

## Other tips

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- Maintain a balanced posture while standing, sitting, and sleeping.
- Get on with your life—this will help you cope and assist with recovery.
- Do what you can following a back-pain episode.
- Stay fit and avoid overeating.
- Keep a positive attitude. Those who cope best know that the pain will get better.
- Stop smoking. Smoking is linked to back pain.
- Don't rely on painkillers alone.
- Connect with work as soon as possible. You may need to modify your activities or job duties.

It's normal to have twinges, aches, or pains for some time after you are back to normal activity.









Visit our website at [worksafebc.com](http://worksafebc.com).

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