Lower Back Pain
Healthshare Information for Guided Patient Management
Introduction
Healthshare is committed to improving your health and wellbeing. This information leaflet is produced by health professionals who are expert in improving musculoskeletal conditions. The information is based on the latest available evidence from research in the field. If you are not sure of any of the given information, please contact our physiotherapy helpline for further information.

Lumbar spine anatomy
What is lower back pain?

- Low back pain (LBP) is pain that is felt over the lower (lumbar) region of the spine.
- LBP that lasts longer than 3-6 months, even after treatment, is called chronic low back pain (CLBP).
- Acute low back pain (less than 6 weeks) can be severe and for a short time could affect your ability to carry on with your normal activities.
- Even severe pain does not generally indicate that something is damaged or that there is a serious problem medically.
- Studies have shown that over 80% of adults have back pain at some point in their lives.

### Conditions that may be causing your back pain

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
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<tbody>
<tr>
<td>Lumbar strain and sprain</td>
<td>Lower back muscle strain and/or ligament sprain is the most common cause for lower back pain. More than 60% of all lower back injuries are related to muscle strain. This is generally associated with sudden injuries while lifting or playing sports.</td>
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<tr>
<td>Degenerative spine (osteoarthritis/spondylosis)</td>
<td>This is another common cause for acute and chronic lower back pain. X-ray studies have shown 43% of men and 25% of women over the age of 50 will have osteoarthritic changes. Remember not all people with osteoarthritis in their spine will experience LBP. However, osteoarthritis can be aggravated by a sudden increase or change in activity or a “jolt”.</td>
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<tr>
<td>Non-specific low back pain</td>
<td>This is a general term used to describe LBP arising from poor posture, muscle spasm, muscle strain, joint irritation, degenerative spinal pain, mechanical back pain and ligament sprain. This is because back pain is rarely due to “one” specific problem. More often it is a combination of many causes. At least 80% of adults experience a significant episode of lower back pain at some point in their lives.</td>
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<tr>
<td>Bulging or herniated disc</td>
<td>Most bulging discs are known to occur in the lower part of the back known as the lumbar spine. This happens when the discs between the vertebrae weaken with wear and tear (degeneration) and/or poor posture. This can cause the disc to bulge or be pushed towards the spinal cord and the nerves going down your legs causing back pain and sometimes pain down the leg known as sciatica.</td>
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<tr>
<td>Sciatica</td>
<td>This is due to irritation of the sciatic nerve which is the large nerve that carries fibres down the legs. This is most commonly caused by a bulging, or herniated disc which starts to irritate the sciatic nerve. The symptoms that you are likely to feel are a burning type pain in the lower back that may then extend into the buttocks and either leg. In some severe cases you may experience numbness and a feeling as if you have lost some control over your legs. This is due to the pressure being placed on the nerve.</td>
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### Osteoporosis

Osteoporosis is a condition where your bone density is reduced. This causes your bones to become thinner and weaker. Osteoporosis may cause generalised bone pain and back pain.

### Scoliosis

This is an abnormal sideways curvature of the spine and may appear as a “C” curve in one direction or an “S” curve in two directions. The picture below is an example of what scoliosis may look like. Bear in mind that some cases will not be as severe as shown here. Exercises are available to those diagnosed with scoliosis.

### Kyphosis and Lordosis

Kyphosis is an increased forward curvature of the upper back, also known as the thoracic spine. Lordosis is an increased backward curvature of the lower back, also known as the lumbar spine. Changes in the normal curvature of the spine can result in pain as there is a greater pressure exerted on the vertebrae, discs and muscles that support these areas.

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<th>Sciatina</th>
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<tr>
<td>Scoliosis</td>
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Pain radiating down right leg from lumbar injury

### Serious pathology

Less than 1 in every 1,000 cases of back pain are related to serious disease (pathology) such as rheumatoid diseases, diseases affecting abdominal organs, gynaecological disease or tumours.

### Other issues

We know that how we think and feel about back pain, how we cope with it and manage it and our beliefs about what is causing the pain have a big effect on recovery. In addition to this, issues with the family and/or work, as well as conditions like depression or anxiety, can also affect recovery. It is important to realise that there is unlikely to be anything seriously wrong and plan to improve you symptoms over time with the right advice and exercise working with your clinician.

“Well, forgive me for not leaping for joy. Bad back, you know.” - Scar, from The Lion King
**When should I see my doctor?**
1. If you are unable to empty your bladder or have numbness in-between your legs (saddle anaesthesia) you will need urgent medical attention.
2. With LBP lasting more than 3 months which has not improved with treatment.
3. If you have severe LBP which affects your sleep despite taking painkillers regularly.
4. If you have LBP associated with leg pain on both sides and/or weakness in your legs.
5. If you have LBP associated with morning stiffness lasting up to an hour and your back pain specifically improves with exercise.

**What help is available?**
More than 50% of low back pain episodes completely resolve within 2 weeks and 80% by six weeks.

If you are suffering from chronic lower back pain, it is important to visit your GP or physiotherapist for further examination to identify possible causes.

Mostly, low back pain can be diagnosed with a simple clinical examination even if the symptoms are severe and/or in your legs.

X-rays are very rarely useful in managing LBP. MRI scans are rarely indicated for LBP and are mostly useful in cases where surgery is considered.

The outcome for people who stay active during their episode of back pain is always better.
Lower Back Pain

Rest and staying active

It is essential that you reduce painful activities for the first 2 weeks of the episode but it is important to avoid complete bed rest. Keeping moving during an acute episode of pain helps to prevent the cycle of joint stiffness and muscle spasm and helps to speed up your recovery. It is also important that you continue to increase your exercise after the pain settles to prevent further episodes of LBP.

Medications

1. Paracetamol is a simple pain killer usually taken without prescription for pain relief. You need to discuss with a chemist if you have any other medical problems before taking this medication.
2. Ibuprofen is a simple anti-inflammatory usually prescribed by doctors to control the inflammatory process.

Ice & Heat

Ice packs are often useful to relieve pain, reduce inflammation and reduce muscle spasms. Hot packs are often useful in reducing muscle spasm before stretching. Please see the exercises below which can improve the mobility and strength of your spine.

Diet

There is no specific diet to help with your pain but it is important that you maintain a healthy, balanced diet in order to avoid excessive weight gain. Increased body weight and obesity will put increased strain on your lower back and may greatly aggravate your condition.

Manual Therapy

This can help to decrease muscle spasm and pain through various techniques including manipulation, massage, assisted exercises and acupuncture. The extent to which these techniques will help is very dependent on your individual situation.

Exercise

Exercises play a significant role in helping with lower back pain and preventing its recurrence. Exercises for chronic lower back pain help to prevent further weakness and pain by maximizing strength, stability, flexibility, endurance and mobility. A regime of regular exercise is essential to prevent future episodes of lower back pain.

Prevention

There are many different ways you can look after your back and prevent back pain.

1. Posture
   Maintaining good everyday posture i.e. trying not to slouch when sitting or standing, periodically standing up and walking around the house/office and when standing trying to balance your weight evenly between the right and left leg.

2. Manual handling
   Using good lifting techniques during day-to-day activities such as gardening and cleaning. Keeping objects close to your body and using your knees with your back straight when lifting an object. Using your feet to turn, trying not to twist your back. When carrying parcels in both hands trying to carry similar loads on both sides. Try and use bags with straps on both shoulders to share the weight.

3. Body weight
   Watch your weight, extra weight can increase the chances of you developing a back injury as it encourages abnormal postures. It can also prolong the recovery process.

4. Adaptations
   Understand your diagnosis and make sure that you look after your back in the future by including good habits into your everyday life.
**Talking Therapy**

Your doctor or physiotherapist may recommend help from someone trained in cognitive behavioural therapy (CBT) to help you manage your pain and plan your recovery. CBT is a talking therapy that can help you manage your problems by changing the way you think and behave. We know from the research this can be effective in managing lower back pain.

**What exercises should I do?**

<table>
<thead>
<tr>
<th>Exercise Type</th>
<th>Description</th>
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<tr>
<td>Stretching exercises</td>
<td>These exercises help to improve the length of the muscles and stimulate the nerve endings in the muscles helping to reduce muscle-related pain. Stretching exercises also increases the flexibility of the joints and stimulate the nerve endings in the ligaments and joint cartilage. These should be performed daily, even on the days when there is no pain. During your stretching regimen avoid over-stretching and try to keep a comfortable balance between maintaining a good stretch while avoiding excessive pain levels.</td>
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<tr>
<td>Mobility exercises</td>
<td>These are exercises which keep normal movement in your spine. They help to move the small joints in your spine and stretch the ligaments around the discs to improve flexibility.</td>
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<tr>
<td>Stabilisation exercises</td>
<td>These exercises help to train the muscles around your spine. These muscles help to support the spine in carrying the weight of your body, much like guy ropes holding up a tent and helps to prevent the spinal joints being over-compressed during your daily activities.</td>
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<tr>
<td>Aerobic exercises</td>
<td>Exercises such as cycling, swimming, water-aerobics and walking are gentle aerobic exercises which help to improve your cardiovascular endurance as well as improving your spinal strength. Aerobic exercise for 20-30 minutes, three times a week is beneficial for general health.</td>
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- It is important that you exercise whether you have pain or not.
- You can spread your exercises throughout the day. For example instead of 30 minutes of continuous exercise you can do three sets of 10 minutes.
- Discomfort or a mild increase in your pain may be expected. Start your exercise regimen slowly and without too much discomfort.
- If you suffer lot of pain you may be exercising excessively or are doing the exercises incorrectly. You may need to adjust your exercises or consult your therapist.
- **Adjusting your exercise:** When you have a flare-up of symptoms, just do the stretches and stability exercises. Once you feel strong you can start the strengthening exercises.
Lower Back Pain

Stretching exercises

**Hamstrings stretch - Lying**
Lie on your back with one knee bent and the other straight. Slowly raise your knee towards the ceiling until your knee is in a straight line with your hip at a right angle (i.e. 90° to your body).
Clasp your hands behind your knee and straighten at the knee and try to point your toes towards your face. You should feel the stretch over the back of the leg.
Hold this position for 20 seconds x 5 repetitions on each side. 3 times a day.

**Single knee to chest stretch**
Bring your knee to your chest until a comfortable stretch is felt in your lower back and buttocks. Repeat with the opposite knee.
Hold this position for 20 seconds x 5 repetitions on each side. 3 times a day.

**Spinal twist**
Lie down on your back, your arms outstretched and your knees bent gently roll your legs over to one side. Hold for 20-30 seconds and then roll over to the other side.
If you cannot feel the stretch along your spine, bring your legs up closer to your body.
Repeat 5 times on each side. 3 times a day.

**Gluteal stretch**
Lying on your back, rest your right ankle on your left knee. Using your hands lift your left leg into the air, bending your knee at 90°. Pull your left leg gently towards your body.
You should feel the stretch in the upper part of your right leg (i.e. buttock region).
Hold this position for 20 seconds x 5 repetitions on each side. 3 times a day.

**Quadriceps stretch**
Lying on your side, pull your heel in towards your buttocks until a comfortable stretch is felt in the front of your thigh.
You can bend the hip and knee of your lower leg to help stabilise your position.
Use a towel if you are unable to reach your leg.
Hold this position for 20 seconds x 5 repetitions on each side. 3 times a day.

**Mid back rotation**
Sit back on your heels in a kneeling position. Stretch forward with both hands as far as you can, keeping your chest as low to the floor as possible.
Now repeat the same on either side.
Hold this position for 20 seconds x 5 repetitions. 3 times a day.

**Core stabilisation exercises**

**Prone plank**
Lie on your stomach with your elbows bend at a right angle. Slowly lift your body by using your elbows and feet.
Hold this position for 3 deep breaths and repeat 5 times twice a day.

**Pelvic bridging exercise**
Lie on your back and keep your knees bent. Slowly lift your hips up and bring to a straight line with your thighs and trunk.
Hold this position for 3 deep breaths and repeat 5 times twice a day.
### Core stabilisation exercises/continued

#### Gluteal activation exercise

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Lie on your stomach, bend your knee and slowly raise your heel towards the ceiling. Avoid arching your lower back and keep your hip still. You should feel the tightness in your buttock. Repeat 10 x 3 sets on each side.</td>
<td><img src="image1.png" alt="Gluteal activation exercise" /></td>
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#### Prone SLR

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<thead>
<tr>
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<tbody>
<tr>
<td>Lie on your stomach with both knees straight. Slowly raise your leg at your hips into the air. Be careful to avoid arching your lower back. Repeat 10 x 3 sets on each side.</td>
<td><img src="image2.png" alt="Prone SLR" /></td>
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#### Wall slides

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<tr>
<td>Stand against a wall with your feet about a foot away from the wall and slightly wider than shoulder width apart. Slowly lower your buttocks while sliding down the wall, until your thighs are parallel to the floor. Keep your back flat throughout this exercise. Repeat 10 times x 3 sets.</td>
<td><img src="image3.png" alt="Wall slides" /></td>
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#### Diagonal curl-up

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<tr>
<td>Stand on your hand and knees - all fours. Now raise your opposite arm and leg without moving your hips, keeping your spine in a neutral position. Do not arch your neck. Repeat 5 times on each side and hold each position for 5 -10 seconds.</td>
<td><img src="image4.png" alt="Diagonal curl-up" /></td>
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### Mobility exercises

#### Cat and camel exercise

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<tr>
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<tr>
<td>Stand on your hands and knees. Slowly arch your spine upwards and try to look through your arms. Hold this position for 10 seconds. Now slowly arch your spine downwards while looking towards the ceiling. Hold the position for 10 seconds. Repeat this 5 times in each direction.</td>
<td><img src="image5.png" alt="Cat and camel exercise" /></td>
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#### Spinal extension exercise

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<tr>
<td>Lie on your stomach with your arms by your side as illustrated. Slowly raise yourself up by gently arching your lower part of the spine. Keep your hips firmly against the floor. Hold this position for 10 seconds and slowly come down. Repeat 10 times. 3 times a day.</td>
<td><img src="image6.png" alt="Spinal extension exercise" /></td>
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#### Pelvic tilt exercise

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<thead>
<tr>
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<tbody>
<tr>
<td>Lie flat on your back and keep your knees bent to 90 degrees/right angles. Now slowly tilt your hips towards you and then slowly away from you. Repeat this 10 times. Repeat 3 times a day.</td>
<td><img src="image7.png" alt="Pelvic tilt exercise" /></td>
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#### Pelvic tilt sitting

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<tr>
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<tr>
<td>Sit on a chair with your back straight. Slowly tilt your hips forwards then slowly backwards. Repeat 10 times. 3 times a day.</td>
<td><img src="image8.png" alt="Pelvic tilt sitting" /></td>
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</table>
**Dynamic strengthening exercises**

**Curl-ups**
Lie on your back with your arms at your sides. Slowly raise your shoulders and head from the floor using your arms to support you if necessary. Keep your neck in a neutral position and try to put your tongue to the roof of your mouth when sitting up (this will stabilise your neck). Repeat 10 times x 3 sets.

**Diagonal curl-up with stretched arms**
With your arms at your sides, tilt your pelvis to flatten your back. Raise your head and shoulders, rotating to one side as your shoulder blades clear the floor. Repeat 10 times x 3 sets.

**Resisted lumbar rotation in standing**
Clamp the elastic exercise band within a closed door. Stand sideways to the door with your feet shoulder width apart. Using both hands pull the exercise band across and downwards from your shoulder to the opposite knee. Repeat 10 times x 3 sets on each side.

**Resisted lumbar rotation in sitting**
Sit on a chair with the exercise band attached to a door handle. Keep your hips/pelvis in a neutral position and gently rotate away from the door in a pain free range of motion. Repeat 10 times x 3 sets on each side.

**Hip strengthening exercises**
Tie a piece of exercise band around the leg of a table or bed, and place your foot through the loop on the other side. Now while holding you belly button towards your spine do the following movements slowly:

**Hip abduction**
Take your leg away from you.

**Hip adduction**
Turn around and bring your leg in towards you.

**Hip flexion**
Facing away from the table, bring your leg straight out in front of you.

**Hip Extension**
Face the table and kick your leg backwards keeping a straight knee. Repeat 10 times x 3 sets of each exercise once a day.

**Lunge walking**
Stand with your feet together and pelvis in a neutral position. Holding some light weights in each hand take a large step forward and lower into a lunge position but do not allow your back knee to touch the floor. When you lunge make sure that both knees are at a 90° angle and then return to the start position. Keep both feet facing forwards. Try to keep a flowing movement up and down, do not hold the lunge position. Repeat 10 times on each leg. You can progress this exercise by holding weights in your hands.