Back pain advice

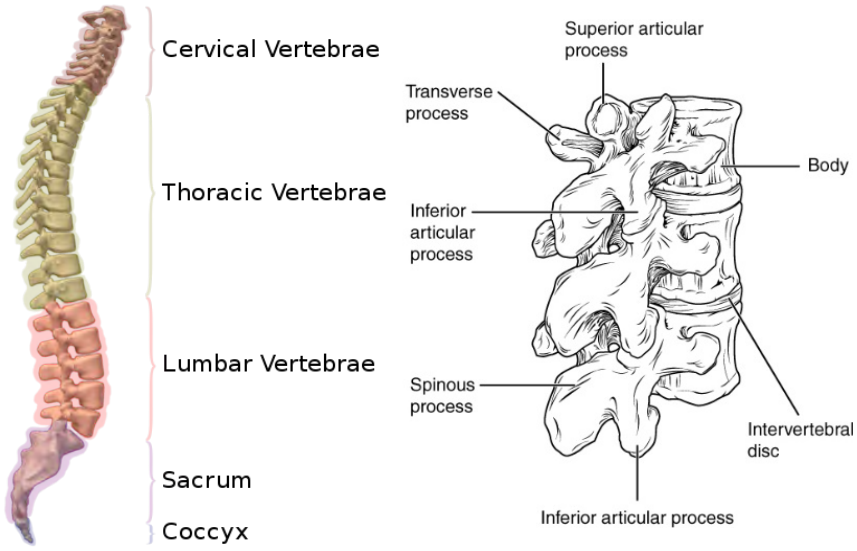
This leaflet gives advice and exercises to help you manage your back pain. If you have any queries after reading it, please discuss with your physiotherapist or contact the physiotherapy department on 0118 322 7812 Monday to Friday 8am to 4pm.

Anatomy of the spine (backbone)

The spine is a flexible column of bone made up of 24 individual vertebrae, followed by the sacrum and coccyx.

The spine has three natural curves which divide it in to three areas, cervical (7 vertebrae), thoracic (12 vertebrae) and lumbar (5 vertebrae).

Intervertebral discs cushion the space between vertebrae and act as shock absorbers. These are attached to the vertebral bodies by strong ligaments and cannot “slip”.



The vertebrae are linked by facet joints, which connect each vertebra to the one above and below.

The spine serves to protect the spinal cord, which runs inside the spinal canal. The spinal cord is made up of nerve tissue and carries messages from the brain to other parts of the body. The spinal cord is also responsible for carrying out many of the body’s reflex actions completely independently of the brain. In the lower back, the spinal cord becomes the cauda equina (horse’s tail), a series of nerve roots that continue, exiting lower down the spine. Once they exit the spine they combine to form a network of nerves that run throughout the body.

The whole column is supported and stabilised by ligaments and muscles.

What causes back pain?

The anatomy of the spine is complicated and there are many reasons for someone to experience pain. Often, the reason cannot be identified. A lot of back pain stems from prolonged poor posture and is rarely due to a serious disease. It can be frustrating not to know exactly what is wrong but in another way, it is good news as it means there is no serious disease or damage in your back.

Most back pain comes from the muscles, ligaments and joints in your back not moving and working as they should. Most people with back pain have no damage in their spine; very few have a true disc prolapse or trapped nerve (even these often get better without intervention).

Due to the fact that the nerves extend from the spine to the rest of the body, pain originating in the back can spread into the arms and legs (known as ‘referred’ pain).

Most pain, regardless of the cause, will settle quickly (at least enough to get on with normal life).

What is the definition of pain?

“An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.” (International Association for the Study of Pain (IASP) 2020.)

Simply put, our experience of pain is unique to us and this experience is influenced by our past experiences, both in the presence or absence of actual tissue damage.

- **Acute pain:** usually comes on suddenly and is caused by something specific. It is often sharp in nature. Acute pain doesn’t last longer than six months and goes away once the underlying cause of the pain has resolved, e.g. a fracture.
- **Chronic pain:** is pain that is ongoing and usually lasts longer than six months. This type of pain can continue even after the injury or illness that caused it has resolved.

Pain is the body’s protective mechanism and can occur even in the absence of actual tissue damage. The brain may interpret signals from an area as pain in order to make us aware that there is the potential for damage and that we should be more cautious in order to protect this area for a while. Once the threat has passed or the injury has healed (if present), the brain will damp down or ignore signals from the area so that we can return to our normal activities without the experience of pain.

- **Hypersensitivity:** The body releases chemicals that make the nerves more sensitive. This makes it easier to trigger pain and reminds you to be careful. This is the body’s way of protecting you while you heal. Protective nerve hypersensitivity is only supposed to last for a few weeks and then it usually disappears. However, sometimes the system malfunctions and the hypersensitivity remains too long, resulting in the nerve cells turning on too easily or the pain can start to spread to other parts of the body. It can also cause the nerves to turn on even when there is no injury or damage.

Investigations

To try to determine whether the cause of your pain requires surgical intervention, the doctors will first take a history and examine you physically. They may then order further investigations, such as blood tests, X-rays and MRI scans.

Not all causes of pain will show up on scans. X-rays will only show fractures, tumours and arthritis. More sensitive scans, such as MRI and CT, will only show gross pathology (obvious abnormalities) and will not show changes within the nerves and spinal cord that cause hypersensitivity.

As we age, our spines age too and many changes shown on such scans are normal signs of aging and frequently are not related to the pain experienced.

Analgesia (pain relief)

The doctors should prescribe you regular painkillers and this should be enough to allow you to mobilise. Some drugs are written on the drug chart to be given only if the patient is in pain and will not be given routinely; therefore, it is important to be honest about your pain levels. There are various types of painkillers that can be prescribed. If you feel that your current regime is not controlling the pain adequately, then please speak to your doctors or nurse about it.

- **Opioids:** Opioid pain medication can cause many side effects, such as dizziness, itching, vomiting, constipation or even death. Recently, researchers have discovered that when you take opioid medications for more than a few weeks, the medication actually increases pain. When you take opioids, the brain stops producing its own natural pain-relieving chemicals. These are stronger, more effective and without the side effects of opioid medication. Also, the more opioids you take, the opioid receptors on the nerve endings begin to malfunction and disappear; resulting in opioid chemicals no longer working.
- **Antidepressants**: Why do doctors describe antidepressants for pain? Antidepressants are medications that increase serotonin levels. Serotonin is a chemical in your body with several jobs. Serotonin regulates mood and can be used for depression but serotonin doesn't just regulate mood. It also plays a very important role in the pain system. The brain uses serotonin to adjust the volume of pain-related nerve messages. If the brain doesn't have enough serotonin, pain-related nerve messages can get intensified. So antidepressant medications are sometimes prescribed by doctors to treat persistent pain.

General advice

Exercise:

The benefits of exercising with persistent pain are well researched and supported.

Dose (how much exercise) – too much versus too little –is perhaps the most common stumbling block when starting to exercise in order to manage pain. Too little exercises means we are unlikely to produce any significant changes to our body, such as increased strength or fitness. However, more commonly, people tend to overdo exercises, often by doing more on their "good" days. Having persistent pain should not stop us from exercising. There is a misconception that pain equates to tissue damage. There is strong evidence that shows us movement and exercise is crucial to managing persistent pain.

Pacing (building up exercise): first work out what you can currently tolerate. Tolerance is how much you can do without pushing your pain to an intolerable limit. Once you know what you can tolerate, aim to achieve this amount or slightly less, consistently for a couple of weeks. It is better to do a steady manageable level of exercise than pushing your limits on days when your pain is less. Once you have achieved a degree of consistency, you can start to consider a gradual increase, i.e. a few extra minutes, a few more repetitions or use a slightly heavier weight.

Use exercise facilities that are close to you and also choose activities that you enjoy doing. If options are limited, consider a basic walking programme.

As well as the obvious physical benefits of exercises, there are also many other reasons why exercise is beneficial in helping you manage persistent pain.These include:

- **Chemicals:** the release of chemicals such as endorphins (the body's own natural painkillers) and serotonins are just a couple of reasons why exercise can help our pain but also boost our mental health and help to manage conditions such as depression.

- **Routine:** lack of routine can cause rises and falls in our pain as levels of activity can vary. Introducing exercise as a protected daily activity can be a good way to gently introduce some routine.
- **Me-time:** life can be stressful so it is important to have some time dedicated to yourself as a way of managing stress. Exercise can be an ideal way to blow off steam and manage stress. All exercise is safe and good when done in the right way; however, these are some common recommendations – yoga, Pilates, swimming, Tai Chi, walking, chair exercises.

Flare up management:

When you live with persistent pain, experiencing a flare up of pain is much more common than you think. For many, it leads to feelings of frustration or sadness, as an increase in pain can make you feel like you've taken a step backwards. For others, it can lead to feelings of fear and anxiety – you convince yourself that you've damaged your body and that something must be wrong.

Sometimes it is difficult to understand why you are experiencing a flare up. This is because there are many factors influencing pain itself:

- Have there been changes to my sleep pattern?
- Am I under more stress?
- Have I changed my activity levels?

How to manage flare ups

- Try to identify what usually makes you feel better or normally helps with your pain, e.g. hot bath, relaxation, yoga.
- Secondly, understand that it is ok to reduce your activity levels a little when the pain is worse but try not to reduce it too much or for too long, as this can lead to deconditioning and make pain and function worse in the long run.
- Reflect on what caused the flare up in the first place and see if you can avoid further flare ups in the future.
- **Pacing:** pacing your activity is about being smart about your activity and energy levels. There is physical, mental and emotional energy. Often, we focus on the physical energy as this is easy to understand. However, mental and emotional energy can equally influence pain and fatigue. Activities that require little or no physical effort can be emotionally and mentally draining and this can be enough to cause a flare up. People with persistent pain often have good days and bad days. On good days they tend to do more. Unfortunately, as a result, on the following days they can have more pain and lower energy levels.

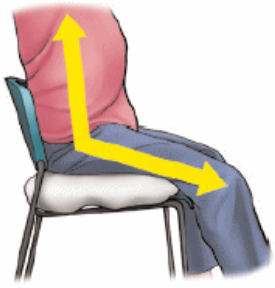
  Making some small steps towards taking control of your activity may:
  - Reduce the severity/duration and frequency of flare ups.
  - Reduce the risk of medication over use.
  - Help maintain better energy levels throughout the day.

  Here are a couple of ways of achieving this.

  - **Discover your tolerance** to certain activities. This is helpful to get you started in managing your activity and can be done by selecting a task and determining how long you are able to do this task for without aggravating your pain. Learn to take a rest before your increase in pain is alerting you to take that break. **This is your baseline.** Remember pain is not your guide; **stop** before an increase in your pain prompts you to stop.

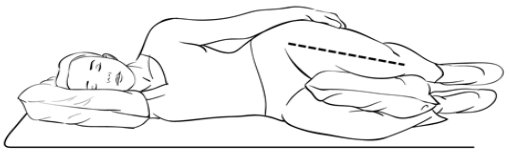
- When managing your daily activity, each day of the week ought to have a **similar level of activity** – no one day should be busier than the other. Ensure that throughout the day you are mindful of your tolerance to the activities you have set yourself. Remember to change posture, stretch or take a break. It may take longer to complete a task but you are likely to have avoided a flare up by doing so.
- **Review priorities:**
  - Can you put the task off?
  - Can someone else do it instead?
- Don't let boring everyday tasks take up all your energy.
- There needs to be a balance between physical and mental activity – switch between the two so that you don't over exert yourself.
- **Be aware of stumbling blocks:**
  - **Trial and error:** working out your activity level can be a little tricky at first, but stick with it until you find your comfortable 'norm'.
  - **Don't take on too much** – try to control the drive to do more on days when you feel better.
  - **The unexpected** – sometimes, life throws things at us that are not expected – allow margins to compensate or absorb – don't panic, let it go!
  - **Get your family and friends on board** – explain to those closest to you what you are working towards so they can support and encourage you.
  - **Set-backs** – accept that these may happen. When you are ready, continue with your goal.
- **Pacing** is about:
  - Achieving.
  - Putting you in control of your mind and body not your pain.
  - Respecting your body as it is now.
  - Be kind to yourself.
  - Keeping pain under the radar.

Postural advice



- Prolonged bed rest is not recommended. It is important to stay as active as your pain allows.
- Try to walk with an upright posture.
- Sit for short spells only. It is best to perch on the edge of the bed or on a firm high chair. Try to ensure your knees are lower than your hips.
- Try a folded towel in the small of your back.
- Get up and stretch/change position every 20-30 minutes.
- If you feel tired or sore, rest lying down rather than sitting.
- Some people prefer a firm mattress or try boards beneath you mattress.

Recommended lying positions:



- On your side with a pillow between your knees.



- On your back with the hips and knees bent and lower legs supported on a pillow.



- On your front with or without a pillow under your stomach or hips.



- To get up from lying on the bed, roll on to your side, drop your legs over the edge of the bed and sit up.

- To lie on the bed, first sit on the edge, lie down on to your side and lift your legs onto the bed so you are lying on your side. Then reposition as comfortable.

Exercises

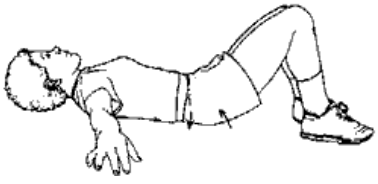
As previously mentioned, exercise has many benefits in helping you to manage your back pain. The exercises below are very gentle and doing them regularly will help you to begin to manage your pain. Physically fit people generally get less back pain and recover faster if they do.

Knee rolling:



Lying on your back with your knees bent, let both your knees drop to one side then the other slowly and gently. You should feel a slight stretch in your lower back.

Pelvic tilt:



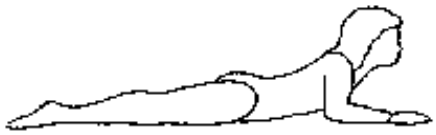
Lying on your back with your knees bent, place your hand in the small of your back. Press back on to your hand, hold a few seconds then release (please note, the picture doesn't show the hand in the small of the back).

Alternate leg hugs:



Lying on your back with your knees bent, bend one knee up and hold it with your hands. Gently draw it up towards your chest, hold for a couple of seconds then gently lower. Repeat with the other leg.

Back extensions:
Lying on your front, push up on to your elbows, hold for approximately 10 seconds, then lie back down flat.



Other advice for managing pain

Other things that you can do to help manage your pain are:

- Give up smoking. www.nhs.uk/better-health/quit-smoking/ or www.smokefreelifeberkshire.com/
- Reduce your alcohol intake. https://www.drinkaware.co.uk/advice or https://www.nhs.uk/better-health/drink-less/
- Reduce stress. Stress can affect the amount of pain you feel. Tension can cause muscle spasm and lead to increased pain. www.nhs.uk/every-mind-matters/mental-health-issues/stress/
- Improve the quality of your sleep. https://www.nhs.uk/every-mind-matters/mental-health-issues/sleep/

If you need advice to help with any of these issues, please ask your health care team or visit the IPASS website (see below).

Useful numbers and contacts

Integrated Pain and Spinal Service (Berkshire West)
www.berkshirehealthcare.nhs.uk/services/integrated-pain-and-spinal-service-berkshire-west
Tel: 0118 904 6139/6140 or email IPASS@berkshire.nhs.uk

Physiotherapy Outpatients, Tel: 0118 322 7812 email: rbft.physiotherapy@nhs.net

Visit the Trust website at www.royalberkshire.nhs.uk

Please ask if you need this information in another language or format.

Karen Lynch, RBFT Orthopaedic Physiotherapy Department
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