

THE LITTLE BOOK OF BACK PAIN

UNDERSTAND WHY YOUR BACK HURTS, WHAT
YOU CAN DO ABOUT IT AND HOW TO STOP
THE PAIN COMING BACK



The Little Book of Back Pain

Contents



- 3 Introduction
- 4 How is the back made up?
- 8 Why is your back hurting?
- 13 Common back conditions
- 31 Article library
- 52 Exercise library
- 63 Stretch library

Introduction

If you're reading this book and have back pain, you're not alone; an estimated 80% of the population will experience back pain at some point in their lives.

As our lives become increasingly sedentary – think smart home devices doing everything at home and shopping from the sofa – this figure is on the rise, with a 12% increase in how likely a person is to experience disability as a result of back pain in the last 20 years, costing the UK economy an estimated £12.3bn a year.

This book will take you through the most common causes of back pain, what each feel like and how your lifestyle may be contributing to the cause.

You'll discover why your back is playing up in certain situations by reading through the article library and finally, how to treat your back pain yourself, with some exercise and stretches to relieve your symptoms

Rather than reading cover-to-cover, use this book as a reference guide, dipping in and out as and when you need to and referring back to the bits relevant to you.

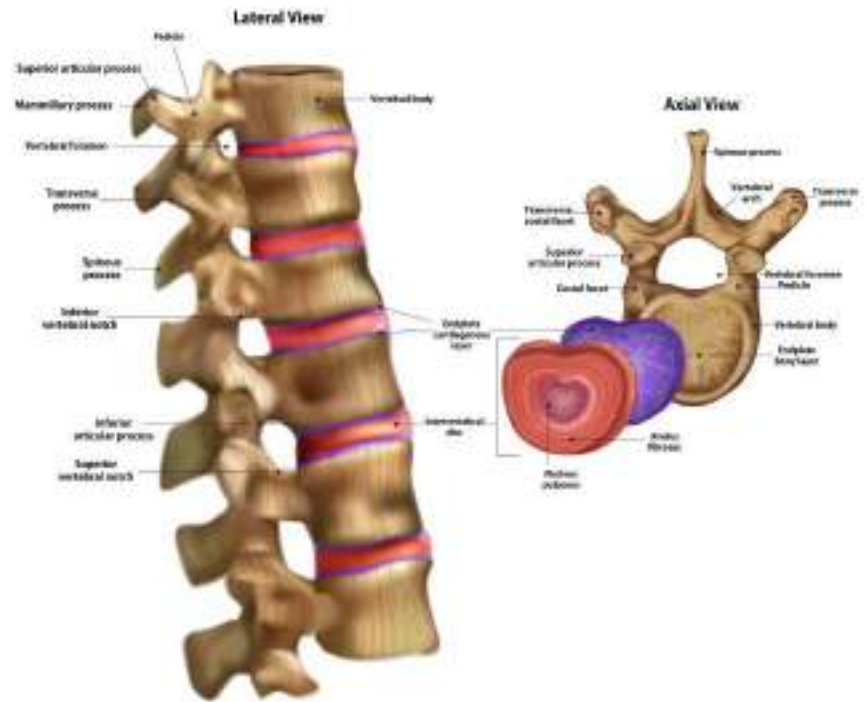
The aim of this guide is to help you understand your back, why it's important to look after it and what you can do if you find your back health compromised.



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How is The Back Made Up?

Your spinal column provides support for your body. Without it, you wouldn't be able to stand upright, bend or twist.



Vertebrae

Your spine consists of 33 bones (your vertebrae) linking your skull and pelvis. Each vertebra has 3 main components;

1. The **vertebral body** at the back of the vertebrae which supports your body weight
2. The **vertebral arch** at the front of the vertebrae which protects the spinal cord.
3. The **transverse and spinous processes** which serve as sites for ligament attachment.
- 4 Facet joints connect the vertebrae and allow the bones to glide smoothly against each other.

The joints contain synovial fluid which acts as a lubricant and protects against wear and tear.

The spinal column is made up of 4 different regions:

Cervical (neck) Thoracic (chest) Lumbar (low back) Sacral (pelvic) The spine has a natural 'S' shaped curve when viewed from the side.

The cervical and lumbar regions have a concave curve and the thoracic and sacral regions have a slight convex curve.

These curves allow the spine to act like a spring, absorbing shock and maintaining balance. Running through the spinal column, protected by the bones, is the spinal cord.

This is a cylinder of nerve tissue which connects your brain to the rest of your body, controlling your movement and keeping your organs functioning

Facet Joints

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 Cervical (neck)

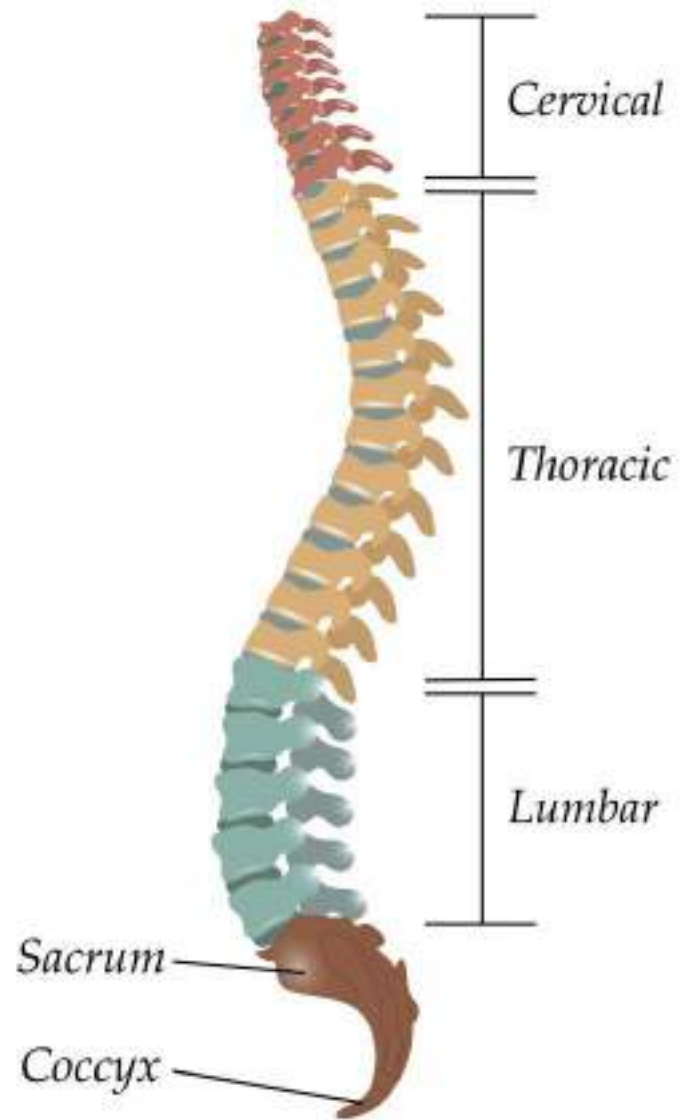
The spine has a natural 'S' shaped curve when viewed from the side.

The cervical and lumbar regions have a concave curve and the thoracic and sacral regions have a slight convex curve.

These curves allow the spine to act like a spring, absorbing shock and maintaining balance.

Spinal Cord

Running through the spinal column, protected by the bones, is the spinal cord. This is a cylinder of nerve tissue which connects your brain to the rest of your body, controlling your movement and keeping your organs functioning.



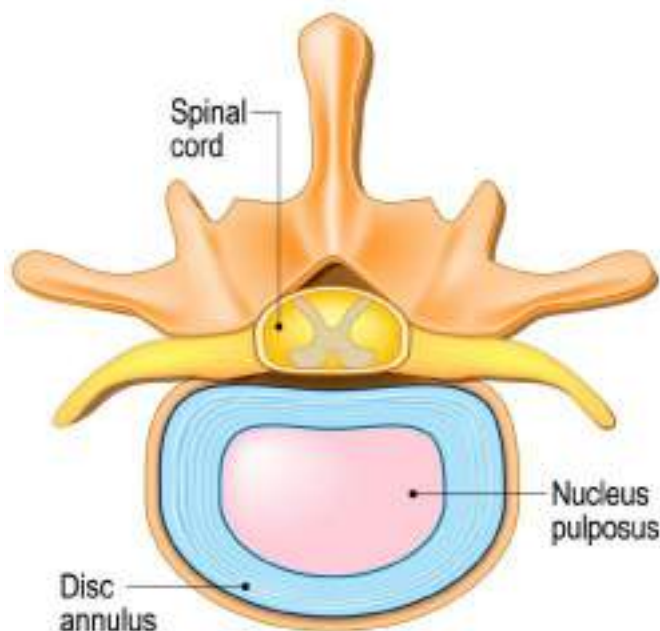
“ *The spine has a natural ‘S’ shaped curve when viewed from the side.* ”



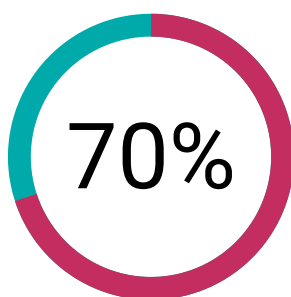
Intervertebral Discs

The vertebrae are separated by soft, fluid-filled cushions called intervertebral discs, which sit between the bones.

It's their job to act as shock absorbers, protecting the vertebrae and spinal cord from injury and/or trauma.



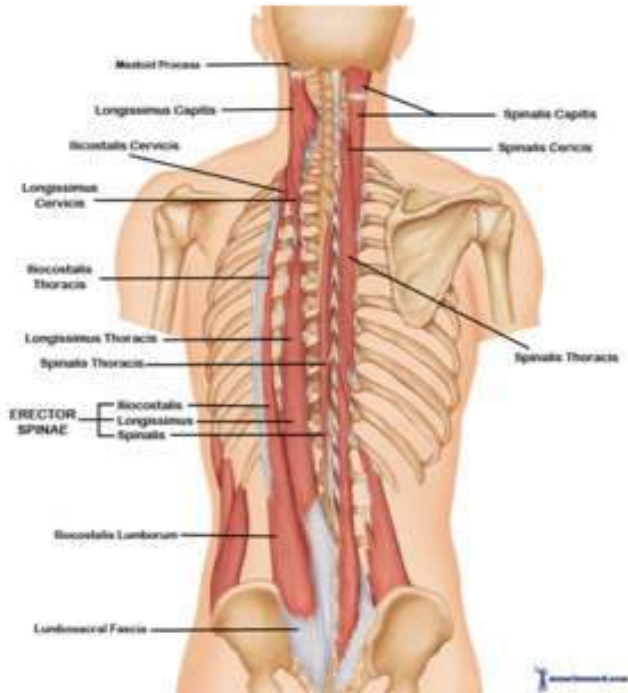
Intervertebral discs in the human back



Water content in an adult disc

Your intervertebral discs have a tough outer fibrous ring called the anulus fibrosus which contains and protects an inner gel-like centre called the nucleus pulposus.

The nucleus pulposus is made up predominantly of water which can move in and out of the disc through small pores as the disc is loaded and unloaded.



Ligaments

A network of ligaments and muscles join everything together to form the spinal column.

Ligaments are tough bands or sheets of connective tissue and link bones together.

The spinal ligaments help stabilise the joints by restricting excessive movements and preventing movement in certain directions.



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Muscles

The muscles of the spine work together to support the trunk, protect the spine and hold your body upright.

They also allow you to bend, twist and move in multiple directions.

The erector spinae group (left) are a set of muscles which work together to straighten the back and keep you upright.

Running almost the full length of the spine, they are made up of The Iliocostal, Longissimus and Spinalis muscles and play an important part in posture and support of the spine.

Spinal Stabilisers



Another significant muscle used in the stabilisation of the lumbar spine is the Multifidus muscle (above, left).

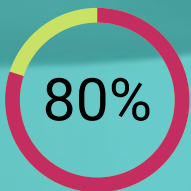
Together with the transverse abdominis and pelvic floor muscles, it stabilises the low back and pelvis before movement of the arms and/or legs takes place.

The transverse abdominis muscle (above, right) is the deepest of the abdominal muscles and wraps around the trunk from front to back.

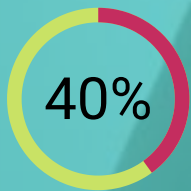
In Addition to supporting the organs located in the trunk, it acts as girdle, stabilising the back and pelvis prior to movement of the body.

Why is Your Back Hurting?

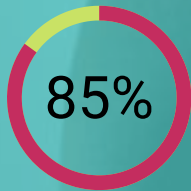
Generally, the type of pain you're feeling, the activity you're performing when you experience it and its location will give you a clue as to what the cause could be.



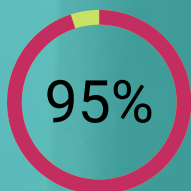
Of people will experience back pain at some point in their lives



Of sickness absence in the UK is attributable to back pain



Of people who visit their GP for back pain have pain which cannot be attributed to a specific disease or abnormality



Of people with back pain will recover within 2-3 months

The good news is, that following a back injury, 70% of people will significantly improve after 2 weeks, and 90% to 95% of people will recover within 2-3 months.

During this 'acute' phase, the focus should be on staying as comfortable as possible whilst the body's natural healing process takes place. Passive treatments such as massage, manipulation (where appropriate), painkillers and heat can all help at this stage.

It's also important to be aware of posture, how to protect your back from further injury, and finding comfortable positions to ease the pain.

Staying active and avoiding excessive rest during the acute phase is also important to avoid rapid deconditioning of the back muscles. The pain experienced by the 5%-10% who do not recover within this time is classified as chronic.

Before we dive into some of the most common back conditions, it's important to address the impact of back pain on the core and back muscles as this is linked to many of the conditions and commonly underpins the basis for their treatment

Weak Back/Core Muscles

Evidence shows that deconditioning because of pain and reduced activity in people who have chronic back pain can result in weakened muscles of the low back and spine.

It is possible for the body to be strong everywhere except the back. The back can only be strengthened when the lumbar spine is moving against resistance.

Typically, if you have back pain, you will (unknowingly) change your body mechanics to protect your back, substituting pelvic motion for lumbar motion.

When we talk about the muscles of the back, we are referring to the lumbar extensor muscles at the back (Multifidus and Erector Spinae – see page 7) which are attached to the spine and stabilise, rotate and extend the back, When we talk about the core muscles, however, we are referring to the muscles of the trunk (Rectus Abdominis, Obliques and Transverse Abdominis, as well as the lumbar extensors above) which surround the mid-section front and back like a corset, stabilising the trunk as the limbs move, providing support for the back and helping us bend and rotate.



“ *It's possible for the body to be strong everywhere, except for the back* ”

Weak Back/Core Muscles

Symptoms

It's not possible to tell whether the weakness causes the pain, or is as a result of the pain, but if you have any of the following symptoms, you may one of many who have weakened muscles of the low back and core:

Pain, aching or stiffness when on your feet for long periods

It is the primary job of your core and back muscles to keep you upright. When the muscles aren't strong enough to support your body, they fatigue and ache as demand on them increases.

Pain when running or exercising

Same as above, your back and core will be working extra hard to maintain your posture and technique as you run/exercise or will force other muscles to work harder to compensate. One study on a group of runners found that when the deep muscles of the core were in a weakened state, the body was forced to overcompensate using superficial abdominal muscles, meaning the runner was able to run in the same way, but with an increased load on the spine.

Aching and/or stiffness towards the end of the day

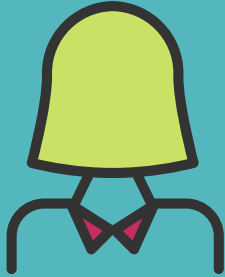
This could be a sign of muscle weakness. Again, your core and back have been working hard to maintain your position all day and may tire as the day progresses.

(note: any back pain which you notice at night when you lie down, and doesn't go away when you adjust positions should be checked by a doctor as it could be a sign of something more serious)

“When the muscles aren't strong enough to support your body, they fatigue and ache as demand on them increases.”

Weak Back/Core Muscles

Contributing Factors



Posture

Your core muscles are designed to carry your body in the best position for your comfort and health and to maintain correct alignment of your body, that is how your head, shoulders, spine, hips, knees and ankles line up with each other.

You should have a natural 's' shape in your spine, so if you are not in alignment (for example, if your shoulders are rounded and your spine curves forwards excessively), your muscles become imbalanced. Some become shorter and tighter and others long and weak resulting in a reduction of use and weakening as a result



Pregnancy

During pregnancy, the muscles at the front of the abdomen stretch and separate to accommodate the growing baby. This, combined with the tipping forward of the pelvis affects the ability to stabilise the core and weakens the muscles as they elongate.

The pelvic floor muscles also make up part of the 'core'. They are essentially a hammock at the bottom of the pelvis, supporting the pelvic organs. As the baby passes through the pelvic floor muscles during birth, core stability is further compromised, and the pelvic floor can become weak.



Surgery

If the abdominal muscles have been cut during any abdominal surgery, the formation of scar tissue where the incision was made will affect the muscles' ability to contract and may result in decreased strength.

During a caesarean delivery, the abdominal muscles are separated to allow the baby to be delivered. After they are stitched back together, scar tissue forms, which can affect the muscle's ability to work properly as they contract. (See page 44 for more information on back pain post-pregnancy)

Weak Back/Core Muscles

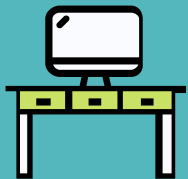
Contributing Factors



Occupation

There may be an imbalance of the core muscles if they are forced to maintain an unnatural position for prolonged periods.

This can be common in occupations such as mechanics, bricklayers and carpet fitters to give a few examples.



Sitting Down All Day

When we stand and move, our deep core muscles are activated and working to keep us upright and to facilitate movement.

As soon as we sit, the muscles switch off. This prolonged decrease in use can cause them to weaken over time. (See page 42 for more information on the impact of sitting for prolonged periods)

“ *There may be an imbalance of the core muscles if they are forced to maintain an unnatural position for prolonged periods.* ”

Common Back Conditions



Ankylosing Spondylitis (AS)



5:1

Male to female ratio of onset of AS

15-35YRS

Peak age of onset of AS

AS is a type of arthritis which results in inflammation of the joints of the spine.

It is commonly first seen in teens and young adults and affects more men than women. In more advanced cases, the body can react to the inflammation by laying down calcium where the ligaments attach to the bones in the spine.

This results in the formation of new bone at the sides of the vertebrae and reduces the flexibility of your back. Eventually, sections of the spine can fuse together and become immobile.

Symptoms often appear gradually, and usually start as persistent, dull pain and stiffness in the low back, where the spine meets the pelvis and may spread up the spine to the neck or even other joints in the body.

Symptoms

- Pain and/or stiffness in the low back and hips, particularly after periods of inactivity.
- Pain which gets better with exercise
- Pain and/or stiffness which are worse in the morning and at night
- Periods of flare-ups which alternate with periods of almost no symptoms
- Additional pain in the neck, shoulder, hip or thigh which is worse after periods of inactivity
- Possible pain, stiffness and swelling in the knees or ankles
- Pain when running or exercising

Contributing Factors

It's not yet known exactly what causes AS, but genetics are thought to play a part, with research suggesting that people carrying a particular gene (HLA-B27) are more vulnerable to developing the condition.

It may also be triggered by one or more environmental factors, though it's not yet known what they are.

Degenerative Disc Disease

Although referred to as such, this condition isn't actually a disease.

It in fact refers to the normal changes which take place in your spine as a result of the ageing process. As we get older, our discs start to show signs of wear and tear, breaking down, thinning and not working as well.

Although it happens to nearly everyone (at least 30% of people aged 30-50 experience degeneration), it is not painful for everybody. The discs are mainly made up of water. As we age, they can dry out and get thinner, this means that with reduced cushioning in between the bones, your spine is less shock-absorbent which can lead to pain and problems in your spine.

Thinning of the discs also increases the risk of small tears developing in the outer shell, and the inner jelly leaking out. As time goes on and discs wear down, the bones of the vertebrae may also start to grind against each other. This can cause bone spurs to form which in turn pinch or irritate the nerves in the spine.

Symptoms

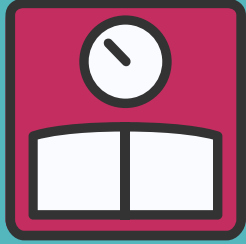
- A Sharp or constant pain in your back and/or neck
- Pain in your low back, buttocks or thighs
- Pain which comes and goes
- Pain which feels worse when you sit down and better on activity
- Pain which gets worse when you bend, lift or twist
- Pain which gets better when you change positions or lie down



“ As we get older, our discs start to show signs of wear and tear- breaking down, thinning and not working as well

Degenerative Disc Disease

Contributing Factors



Obesity

Excess body weight causes additional strain on the discs and accelerate the degenerative process. This is because the parts of your spine will have to work harder to carry the extra weight.



Family history

People with a family history are more likely to develop the condition as genetics play a significant role in its development. If a parent has had back or neck surgery by their middle age, particular care should be taken to prevent the onset of back problems.



Occupation

Careers involving heavy manual labour increase the risk of disc degeneration. People with physically demanding jobs which require repetitive heavy lifting, twisting or bending are more susceptible to weakening of the discs as they are placed under additional stress. In addition, jobs which expose the body to whole-body vibrations such as driving, can lead to accelerated degeneration of the discs.

Degenerative Disc Disease

Contributing Factors



Sports

People who participate in heavy sports face a greater risk of disc damage due to consistently placing heavy stress on their spine, particularly in sports which involve twisting, such as golf, or activities which increase the load on the spine such as weightlifting.



Biomechanics

If you suffer from conditions such as scoliosis (a side-to-side curvature of the spine – see page 24), degeneration can occur as the discs are under uneven pressure due to the abnormal position of the spine.



Injury

If a traumatic injury such as a car accident is sustained, you may experience stiffness and limited mobility. This in turn can activate a period of relative instability, and disc changes may occur, resulting in degeneration.

Desiccated Discs

Also, sometimes referred to as dehydrated discs, this is one of the most common features of degenerative disc disease and refers to the loss of fluid in the discs as you age.

As the fluid is lost, it's replaced by the tough, fibrous tissue that makes up the outer portion of the disc.

Symptoms

- Neck or back pain
- Stiffness in the back Weakness in the back
- Tingling or numbness in the back

Contributing Factors



Ageing

As part of the body's natural ageing process, the discs naturally lose fluid. Wear and tear on the spine also plays a part.



Injury

Trauma from an accident or injury can promote early development of disc dehydration.

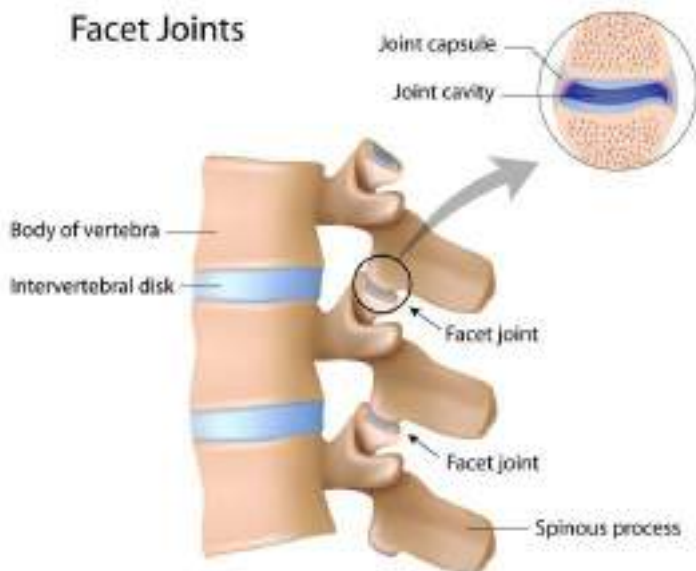


Sudden Weight Loss

Rapid weight loss can cause your body, including your discs, to lose a lot of fluid.



Facet Joint Syndrome



Symptoms

- Unpredictable pain, possibly scattered over a few months
- Soreness when pressing on the area where pain is felt
- Pain when leaning backwards
- Pain when sitting for long periods

When suffering from facet joint syndrome, movements such as bending backwards or twisting sideways towards the affected joint will cause pain

Facet joints are the bony protrusions at the back of the spine which join the vertebrae together.

They are the joints that make your back flexible and allow you to bend and twist.

The joints are lined with cartilage and lubricated by a substance called synovial fluid. When healthy, the bones move freely over each other without grinding.

Nerves pass through the joints from the spinal cord to on their way to the rest of the body.

Degenerative changes in the discs and subsequent thinning of discs can cause pressure on the facet joints, affecting how the joints line up.

This added pressure causes wear and tear which eventually destroys the cartilage and fluid in the joint and causes the soft tissue surrounding the joint to swell.

As a result of this damage, the bones rub together.

When this happens, the body tries to heal itself by building new bone which results in the formation of bone spurs, growths which protrude from the bone and can press on the nerves which pass through the joint.

There is an added risk that these bone spurs continue to grow and narrow the spinal canal.

When suffering from facet joint syndrome, movements such as bending backwards or twisting sideways towards the affected joint will cause pain.

Standing for long periods may make it worse and anything which takes the weight off the joint such as sitting or lying down can ease the pain.

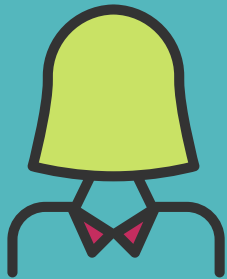
Facet Joint Syndrome

Contributing Factors



Wear and tear

The most common cause of facet joint syndrome is general wear and tear as part of the ageing process, resulting in a thinning of the cartilage between the joints.



Posture

Abnormal posture can place additional pressure on the facet joints, resulting in inflammation and pain.



Injury

When there has been a trauma, particularly a whiplash injury, the facet joints can become torn away from each other. This can damage the cartilage, as well as causing associated muscle stiffness and pain. In extreme cases, the facet joint can become dislocated.

Sciatica

With the approximate thickness of a pencil and running from the low back down to the feet, the sciatic nerve is the longest nerve in the body.

It originates in the lumbar & sacral spine, travels through the muscles in the buttocks, branches out down the leg and attaches to the foot.

It can become irritated by muscles in its path (most commonly in the buttock or leg) tightening or going into spasm, or by a bulging or herniated disc (see page 19) in the low back pressing into it.

It is also associated with degeneration of the spine, or spinal stenosis (see page 27), which causes a narrowing of the tunnel which the nerve passes through.

Although sciatica is technically a symptom rather than a condition, it's still important to cover in its own right as it's so common.

Symptoms

- Pain in the low back or buttock, travelling down into the leg and/or foot
- Pins & needles in the leg or foot
- Numbness in the leg or foot
- Pain when you laugh or cough

“ the sciatic nerve is the longest nerve in the body.”





Slipped disc

A slipped or herniated disc is the most common cause of sciatica.

It happens when the outer edge of the intervertebral disc ruptures and the inner jelly-like centre pushes out and presses on the sciatic nerve.

Sometimes the outer edge doesn't break, but the disc protrudes. This is referred to as a bulging disc and can also put pressure on the nerve.

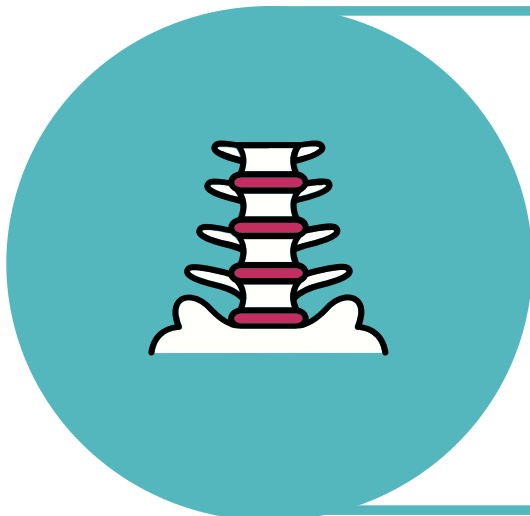


Pregnancy

As the bump grows, your centre of gravity shifts.

This can lead to an increased arching of the back which in turn tilts the pelvis forwards.

This can sometimes mean that the muscles in the buttocks tighten and pinch on the nerve. Some woman also find that the expanding uterus can press directly on the nerve towards the end of pregnancy, or even as the baby starts to move into position, it can rest on the nerve.



Disc degeneration/arthritis

As we age, our intervertebral discs can deteriorate. Over time (or sometimes due to injury), the disc can become arthritic, narrow or shrink.

This can increase the risk of the disc rupturing and therefore potentially giving rise to sciatica.

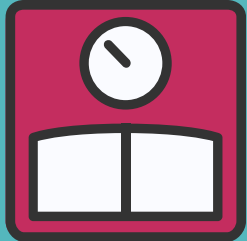
The degenerative process could also lead to the development of spinal stenosis, a narrowing of the bone canal through which the sciatic nerve passes which in turn compresses the nerve.



Smoking

Smoking has been associated with a higher risk of developing sciatica.

This could be due to the reduced blood flow to the discs, leading to degeneration.



Obesity

Excessive body weight places additional pressure on the back, increasing the rate of degeneration.

This increased pressure also increases the risk of disc injuries.



Piriformis syndrome

The Piriformis muscle is located in the buttocks, near the top of the hip joint.

The sciatic nerve passes through the piriformis muscle and can be compressed if the piriformis muscle is tight or goes into spasm.

This can be caused by prolonged sitting (particularly on hard surfaces), repetitive action during sports (i.e. football, running) or climbing stairs.

Scoliosis

In mild cases, it often doesn't cause pain and doesn't require treatment, but some people will experience back pain.

Sometimes treatment is needed to stop the bend getting bigger, but it may stop, especially in younger people.

Signs of scoliosis include one shoulder looking higher than the other, uneven hips or the waist appearing off centre.

In 80% cases of scoliosis, the cause is unknown, but less commonly, it can be caused by certain factors.

Symptoms

- Uneven shoulders or hips
- A visible sideways curvature of the spine
- Prominent ribcage
- A difference in leg length

Contributing Factors



Underlying muscle or nerve conditions

Conditions such as cerebral palsy or muscular dystrophy affect the muscles and can cause scoliosis.



Genetics

Sometimes scoliosis runs in families, so you may be likely to inherit it if you have a family history of the condition.



Degeneration

General wear and tear of the spine as part of the normal ageing process can lead to an unnatural curvature as the discs and joints wear

Slipped Disc

The intervertebral discs are made up of a tough outer shell (Annulus Fibrosus) and a soft-jelly like substance (Nucleus Pulposus) contained within it.

These discs separate the bones of the spine (the vertebrae) and act as shock absorbers, protecting the bones from things like lifting, twisting and impact.

When the outer shell becomes weak or torn, the inner substance can leak out.

This is referred to a slipped or herniated disc.

Sometimes the outer shell doesn't tear, but the inner substance causes it to protrude. This is referred to as a bulging disc.

Symptoms

- Pain and numbness, usually on one side of the body
- Pain which extends to your arms and legs
- Pain when you cough or sneeze
- Pain which gets worse at night or when moving in a certain way
- Pain which gets worse after sitting or standing for a period of time
- Pain which has developed quickly



“ When the outer shell becomes weak or torn, the inner substance can leak out.



Degeneration

As we age, discs can degenerate through wear and tear. This leaves them more vulnerable to tears and injury.



Smoking

Smoking decreases blood flow to the discs. This leads to less-healthy discs and degeneration.



Lifting

Discs can slip out of place if you lift with poor technique, move suddenly or twist and lift at the same time. Jobs requiring a lot of lifting put additional strain on the discs and can contribute to the risk of a slipped disc.



Weakness

If you have an underlying weakness in your core or back muscles, there is less support for your spine which means it's more vulnerable to injury as it's less protected.



WOMEN

Are at greater risk of developing
Spinal Stenosis

50+ YRS

Peak age of onset

Nerves travel from the spinal cord out to the rest of the body and pass through spaces within your spine.

Spinal stenosis is the narrowing of these spaces which can put pressure on the nerves.

It occurs most often in the low back and/or neck and is most common in men and women over 50.

Not everybody with spinal stenosis will experience symptoms.

Some people are born with a narrow spinal canal, but spinal stenosis is most commonly caused by age-related changes which happen over time.

Symptoms

- Pain in the legs, calves or low back when walking or standing
- Pain which worsens when walking up or down a hill, ramp or steps
- Pain which is relieved by sitting down or leaning over
- Numbness or tingling in a hand, arm, foot or leg
- Bowel or bladder dysfunction (in severe cases)

“ Not everybody with spinal stenosis will experience symptoms.”

Spinal Stenosis

Contributing Factors



Wear and Tear

Damage to the bones caused by them grinding together as they wear can lead to the formation of bone spurs. These spurs can protrude into the spinal canal



Tumours

These are rare, but sometimes abnormal growths can form inside the spinal cord or in the space between the spinal cord and the vertebrae. They are identified by an MRI or CT scan.



Injury

If a trauma has taken place, a piece of displaced bone may damage the contents of the spinal canal.



Thickened ligaments

Over time, the ligaments which hold the bones of the spine together can thicken and become stiff, leading to them bulging into the spinal canal.

Spondylolisthesis

This is where one of the vertebrae slips out of position, either forwards or backwards.

Not to be confused with a slipped disc, it is movement of the bones, rather than rupturing of the intervertebral disc.

It most commonly occurs in the low back but can also happen in the mid back or neck region.

Many people don't realise they have spondylolisthesis as it may not present with any symptoms.

Symptoms

- Low back pain which gets worse on activity or when standing and is relieved when lying down.
- Sensations radiating from your back down your legs
- Pronounced curvature of the spine
- Tight hamstrings Pain, stiffness or tenderness in the back



It is movement of the bones, rather than rupturing of the intervertebral disc.

Spondylolisthesis



Birth Defects

If a vertebra is defective from birth or has formed abnormally, it is at greater risk of slipping forwards.



Injury

A trauma to the spine such as a fracture can result in the vertebra slipping out of place.



Repetitive strain to the spine

Spondylolisthesis is common in gymnasts and weightlifters, due to the repeated trauma on the spine. The bones may weaken or become defective and slip out of place



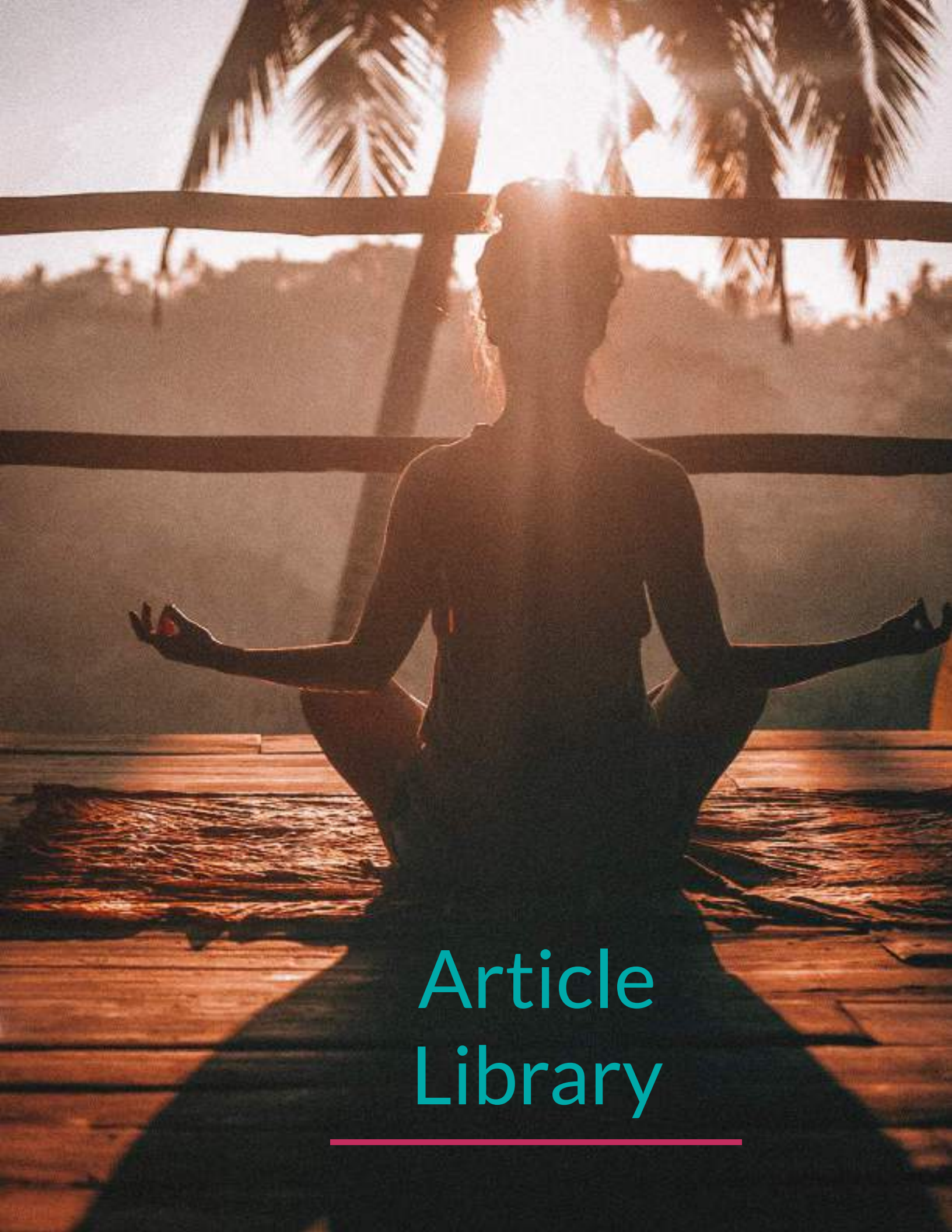
Wear and tear

This is the most common cause of the disorder and occurs when the discs degenerate with age and are less able to resist movement by the vertebrae



Bone Abnormality

Less commonly, slippage may occur when the spine is weakened by disease (such as osteoporosis), an infection or a tumour.



Article Library

FIRST AID

For Back Pain

What would you do if your back 'went'?

If your back ever 'goes', you'd like to think that it was from doing something heroic, right?

Something you can impress your friends with as you regale your story of courage and bravery.

Less impressively though, 9 times out of 10 people experience that terrifying locking-up from doing something slightly less bold.

Think taking the washing out of the machine, closing the car door, or sneezing. Wave goodbye to your bragging rights.

The good news is that 90% of people who experience back pain will recover within 6 weeks.

The aim of this stage is to stay comfortable, manage your pain and avoid making the problem worse as you recover.

If you are unlucky enough to seize up next time you pick up a pencil (it happens) then follow these tips for some self-care which you can do at home.



90% of people who experience back pain will recover within 6 weeks.

FIRST AID FOR BACK PAIN

1. DON'T PANIC

This is easier said than done but when your back seizes up, the muscles are in spasm. The more tense you are, the less likely this spasm is to ease.

Be reassured by the fact that there's a 90% chance you'll recover in a few weeks and try to relax as much as you can.

2. TAKE SHORT WALKS

Movement is highly beneficial for back pain. When you move, your joints release a fluid which helps lubricate them.

If your spine is locked up, the release of this fluid will help you move more freely and feel less stiff.

In addition, your muscles will loosen off, and you'll be helping your core muscles activate.

In the initial stages, walking may be pretty uncomfortable so take it in baby steps, just walking around the house for 5-10 mins at a time at first.

3. REST FOR THE FIRST HOUR

Try and find a comfortable position when your back first locks up. To help the muscles ease, rest in this position for about an hour.

4. AVOID BENDING & TWISTING

Your back is at its weakest when it's bending and twisting at the same time.

Often that's the movement you were doing when it went in the first place.

When putting washing in the machine, kneel down before you twist, and if you're picking something up, position yourself so you don't have to twist as you do so.



FIRST AID FOR BACK PAIN

Your body will try and protect your back by moving differently and not using the muscles which you need to keep your back strong.



5. TAKE IBUPROFEN

Ibuprofen is both a pain-reliever and an anti-inflammatory, so it can help with pain and reducing any inflammation caused by your injury. Short-term it may provide relief.

6. KEEP WARM

Heat therapy can work wonders on muscle spasms by increasing circulation, helping you to relax and by decreasing pain transmitters to your brain. Take a warm bath or shower or use a heat pack or hot water bottle on your low back.

7. ACTIVATE YOUR CORE

You know how when you have a bad leg, you limp as your body tries to compensate and use the stronger muscles instead of the injured ones?

The same can happen with back pain. Your body will try and protect your back by moving differently and not using the muscles which you need to keep your back strong.

The danger in the first 6 weeks is that your back and core muscles will weaken, which then leads to a longer-term problem and leaves you vulnerable to injury.

Override this by consciously activating your core every time you move, lift and bend to maintain your strength and protect your back.

8. KEEP MOVING

And avoid long periods of time sat down. As I mentioned before, your body needs to move to avoid seizing up so over the course of your episode, stay as mobile as you can.

Take frequent breaks from your desk if you're office-bound and try and fit in a daily walk, or some gentle exercise. Which leads nicely on to...

9. GENTLE CORE EXERCISE & STRETCHING

Seek help from a back specialist to get some advice on safe exercises and stretches to ease your pain and help prevent further attacks. Try and avoid sit-ups, as they won't work your deep core muscles and may put extra strain on your back. See page 51 for examples of some useful exercises for back pain.

HOW TO SLEEP

When you have a bad back

Is your back pain keeping you up at night?

It's not unusual for people with back pain to experience exhaustion, following months - sometimes years - of surviving on very little sleep thanks to their back problem.

Sleep is vital for basic human function. It's the time when our body rests and repairs.

If you have back pain, that rest and repair become even MORE important.

Yet, as so many people with back pain will tell you, getting comfortable enough for a decent night's kip is easier said than done.

Try these strategies to help soothe you into a comfortable slumber the next time your back threatens to keep you up all night:

1. FIND YOUR POSITION

This one is tricky as everyone has their own comfortable position, but often the position which aggravates backs the most is sleeping on your front.

In this position, your spine is in an unnatural position and unable to maintain its natural curve, which subsequently puts pressure on your back muscles.

If you sleep on your side, try placing a pillow in between your knees to stop your top leg sliding forward and rotating your spine.

If you sleep on your back, try a pillow under your knees or small rolled up towel in the small of your back to maintain the curve of your spine. Keep in mind at all times the natural shape of your spine and trying to maintain that in your sleeping position.

“ Sleep is vital for basic human function. It's the time when our body rests and repairs. ”



HOW TO SLEEP WHEN YOU HAVE A BAD BACK



2. TAKE A WARM BATH

The warmth of the water will help relax your muscles. If you're feeling stiff and tense, or your muscles are in spasm, this is the ideal way to encourage your body to relax as you prepare for slumber.

You'll also experience the added mental benefits of helping relax your mind at the same time as warm baths can trigger the production of melatonin, the sleep hormone.

Salt baths are proven to reduce inflammation so using Epsom salts or magnesium in the water may also help.

3. PILLOWS

Too many or too little and you'll have an unnatural curve in your neck.

Choose a thickness which keeps your head and neck in alignment with your spine.



Choose a mattress which supports your back and helps maintain the alignment of your spine

4. MATTRESS

Getting the right amount of support is vital and investing in a decent mattress should be a priority if you have back pain.

In terms of the support, ultimately, there is no one type of mattress which is best for all back pain, so you should choose one with the right level of support for you, whilst maintaining the comfort you need for a good night's sleep.

Choose a mattress which supports your back and helps maintain the alignment of your spine, without sagging in the middle, for example.

One study found that medium-firm mattresses usually provide more back pain relief than firm mattresses.

One which is too firm may cause pressure points on your shoulders and hips, so find one where your shoulders and hips can naturally sink in slightly.

CYCLING

With Back Pain

Are you having to cut your rides short because your back hurts?

As well as tan lines and inside-leg chain ring imprints, there is something less welcome which many cyclists have in common.

Though it's frequently thought that knee pain is the main culprit, back pain is in fact the biggest cause of complaint amongst cyclists spending long periods in the saddle.

In one study, out of 116 cyclists who had suffered some kind of overuse injury in the past 12 months, 58% had experienced lower back pain.

So why is it so prevalent in such a low-impact sport? The chances are, the cause of the pain is not limited to any one thing, but a combination of factors which may or may not be correlated.

Blame is commonly placed on the little-known psoas muscle. Originating in the low back, it travels over the pelvis and attaches to the thigh bone and is responsible for pulling the leg towards the chest.

Given that this is the position that cyclists find themselves in for long periods of time with the muscle in a shortened state, it's no surprise, then, that the muscle adaptively shortens, causing the back to arch as the muscle pulls on the spine, causing pain, weakness and muscle imbalances.

This is increased risk in riders who spend long periods sitting during the day, and whose psoas may be in an already shortened state.

“back pain is in fact the biggest cause of complaint amongst cyclists spending long periods in the saddle

Counteract this by stretching the psoas, particularly after a long ride. Kneeling down, put one leg in front of the other, foot on the floor and push your hips forwards until you feel the stretch at the front of your hip (keeping your back straight).

Increase the stretch by raising the arm on the same side as your back leg and bending to the side.

Deep tissue or sports massage on the psoas and low back can also help to release the muscle and ease any tightness.



CYCLING WITH BACK PAIN

One of the jobs of the deep core and back muscles are to stabilise the pelvis and back.

For cyclists, this means transmitting energy from the trunk down to the pedals without compromising the stability of the spine or pelvis.

When the core is weak, however, this increased instability places additional strain on the back, increasing the risk of pain, as well as more sinister problems such as slipped discs.

During a ride, the muscles in your legs fatigue. As they tire, your postural muscles may be forced to compensate by taking on additional load.

If they are already tired from keeping your position throughout the ride, this additional strain can cause your back to ache.

By performing some simple core strength exercises a couple of times a week, you're protecting yourself against weakness-related pain and giving your muscles a better chance to support your body and prevent back pain.



During a ride, the muscles in your legs fatigue. As they tire, your postural muscles may be forced to compensate by taking on additional load.



RUNNING

With Back Pain

Is back pain stopping you in your tracks?

Whether you're a seasoned marathon runner or have just embarked on your first C25K, the last thing you want is back pain stopping you in your tracks (sometimes literally).

Yet it's a problem faced by many runners. There are a number of reasons why you may feel aches in your back from running and whilst the culprit may not be running related, it may manifest itself as such.

WEAK CORE MUSCLES

It is the job of your core muscles to keep you upright and to protect and stabilise your spine.

When you run, the instability in your spine increases the demand on your core muscles. If the core is in an already weakened state, other muscles will compensate to try and keep the spine protected.

One study found that the compensating muscles caused greater shear forces (pushing and pulling of the vertebrae) in the lumbar spine.

This means that although you may be running in the same way, with the same form, you are overloading the spine in ways which could cause pain and injury.



When you run, the instability in your spine increases the demand on your core muscles



RUNNING WITH BACK PAIN



SACROILIAC JOINT DYSFUNCTION

The 2 sacroiliac joints are located at the bottom of your back, just next to the two knobby bits of bone in your lower back.

You can find them easily as there are two dimples in the skin over the joints. When you run, your pelvis absorbs the shock from the impact and transmits it into the sacrum (at the very base of the spine) and up the spine.

If you run with an uneven load on each leg, the muscles around hip, spine and pelvis aren't providing enough stability or have lax ligaments due to hormonal changes (often pre and post-natally) the joint can become irritated and painful as a result of excessive pressure being put on it.

If you have SI joint pain, you may feel an ache in your back which you can pinpoint to a location at the base of your spine, which can get worse when you run, climb stairs or stand up from a seated position.

To start to help alleviate symptoms caused by SI joint dysfunction, work on firing your glutes (the muscles in your buttocks) correctly.

Once they are working as they should do, your body will better be able to withstand the load and support your pelvis as it should.

WEAK BACK MUSCLES

The deep back muscles stabilise and support the spine.

Without adequate strength, the muscles fatigue more quickly, and are less able to control movement causing the aching in your back and leaving you vulnerable to injury.

Set aside time as part of your normal weekly routine to work on your core. Ideally, a couple of times a week, but even one good core training session will help you get stronger.

Concentrate on exercises which work the core as a whole such as the plank, rather than ones which focus on the superficial 'six pack' muscles, such as the traditional sit-up.



If you have SI joint pain, you may feel an ache in your back which you can pinpoint to a location at the base of your spine

RUNNING WITH BACK PAIN



Biomechanical problems in at the bottom of the kinetic chain may have a knock-on effect in the middle of it.

BIOMECHANICS

Biomechanical problems in at the bottom of the kinetic chain may have a knock-on effect in the middle of it.

For example, overpronation (where the foot rolls inwards as it strikes the ground) can cause poor movement patterns in the hips, which in turn can affect the spine.

To check if your feet are causing your back pain, a visit to a running specialist can ascertain whether you have any mechanical issues and the answer may be something as simple as switching to a different running shoe or using orthotic insoles in your trainers when you run.



BACK PAIN

When Sitting Down All Day

Is sitting all day a pain in the back?

Work-related back pain is a major contributor to working days lost to musculoskeletal disorders in the UK.

Official figures reveal that almost 3.5 million working days were lost to back pain in 2015/16, and a recent survey found that 38% of people in the UK claimed work caused their back pain.

Traditionally, work-related back pain has been more common among manual workers, but it is becoming increasingly more prevalent among desk workers, with 31% saying their workstation caused bad posture and back pain.

The average office worker spends 75% of their day sitting down, and more than half of that comes in periods of 30 minutes or more of sedentariness.

But what impact does this have on your body, and how does it contribute to back pain?

“ 90% of people who experience back pain will recover within 6 weeks.”



BACK PAIN WHEN SITTING DOWN ALL DAY

YOUR DISCS

Sitting puts more pressure on your spine than standing.

When you move, the discs in your spine (which act as shock absorbers in between your vertebrae) expand and contract, which allows blood and nutrients to be absorbed, keeping them healthy.

When you sit, your discs are compressed which, over time, can cause you to lose flexibility and increase your risk of herniated (slipped) discs.

Studies show that adjusting your position just every 15-30 minutes can prevent changes to your discs and the amount of time you spend seated uninterrupted is just as important as the total number of hours seated in a day when it comes to increasing your risk of back pain.

YOUR MUSCLES

When you stand up, your core and back muscles are activated and working to keep you upright.

When you sit, however, these muscles aren't working and remain in passive. Because of this, when you sit for too long, your muscles weaken over time.

When you have weak back and core muscles, your spine is less supported and more vulnerable to pain and injury.

It is recommended that you stand for at least 2 hours over the course of the working day.

This doesn't have to be all at once, it can be taken in short bursts of standing, walking or fidgeting., Anything but sitting still.



Studies show that adjusting your position just every 15-30 minutes can prevent changes to your discs



BACK PAIN WHEN SITTING DOWN ALL DAY



YOUR FLEXIBILITY

In a seated position, your hip flexor muscles at the front of your hip are in a shortened state.

Over time, this prolonged position can cause the muscles to adaptively shorten, meaning you lose flexibility and range of movement in your hips.

Because the muscles attach to your pelvis - as does your spine - this shortening and tightening can cause an imbalance and result in a tilting of your pelvis which in turn changes the position of your spine, causing pressure on the discs and low back muscles.

By taking regular breaks from your desk, and working on stretching your hip flexors, you can help alleviate this shortening. Deep tissue massage also can help improve the flexibility of the soft tissue.

“ *In this unnatural position, your muscles can stay contracted for longer than they are supposed to* ”

YOUR NERVES

Your body is designed to move, not to remain seated for prolonged periods.

In this unnatural position, your muscles can stay contracted for longer than they are supposed to, and this sustained contraction can pinch the nerves which run through the muscular structure.

To reduce the risk of this happening, get up and move regularly. This will help the muscles release and boost your circulation.



BACK PAIN WHEN SITTING DOWN ALL DAY

YOUR POSTURE

As time is going on and our lifestyle now often lends itself to longer periods of sitting and inactivity, it's actually harder work for our postural muscles to keep our bodies in the correct position.

As we become used to slouching at our desks, our chest muscles tighten as we round forwards, our upper back and neck muscles stretch and therefore weaken as a result and our hamstring and hip flexor muscles tighten as they get used to being in a shortened state.

It can be difficult to remember to sit with correct posture at first, and you may find that because some of the postural muscles aren't used to working, you may experience aches at first.

By optimising your workstation, however, you can encourage good alignment to help yourself naturally get into position.

Simple changes such as changing the height of your chair can help support good posture and avoid back pain.

YOUR CHAIR

- Your thighs should be at right angles to your body or sloping slightly down
- Your feet should be flat on the floor, use a footrest if you need to

YOUR KEYBOARD

- Your forearms and wrists should be straight and level with the floor
- Tuck your elbows into the side of your body with an 'L' shape at the joint

YOUR SCREEN

- Position your screen at arms-length away so you don't have to crane your neck forwards to see it
- The top of your screen should be at eye-level



BACK PAIN

In Pregnancy

Pregnancy, breastfeeding and hormonal changes can all contribute to back and neck pain.

Someone previously unaffected by back pain can suddenly find themselves suffering after carrying a baby for 9 months and it goes without saying that lifting, holding and carrying babies and toddlers can aggravate an already weakened area.

There are steps you can take to firstly prevent attacks but also to relieve the pain if you do find yourself suffering physically from the demands of caring for a baby.

MUSCULAR TENSION

As well as posture related pain from carrying a heavy bump for the latter stages of the pregnancy, feeding, lifting and carrying baby may all contribute to your shoulders rounding forwards.

Add in the pressure of a massive lifestyle change and lack of sleep and chances are, your neck and shoulder muscles will be tight, knotted and stressed out.

A sports or deep-tissue massage can really get into the muscles and gently ease out any tension

“ *Someone previously unaffected by back pain can suddenly find themselves suffering after carrying a baby for 9 months*



BACK PAIN IN PREGNANCY

WEAKENED CORE

During pregnancy, your abdominal muscles spread to make way for the growing baby, leaving them considerably weaker post-natal.

Considering the amount of lifting, bending and carrying we do once the baby is here, it's no surprise that so many women experience chronic back pain after giving birth.

Once you have been given the go-ahead to exercise by your GP, you can start core training, though avoid any type of 'crunching' or 'curling' abdominal exercise.

By doing these kind of exercises, the muscles will not knit back together correctly. Instead, you should perform moves which work the core as a whole, such as the plank, functional exercises and Pilates-type exercises.

If you have a separation of greater than a 2-finger width down the centre of your tummy or have a raised ridge, you may have diastasis recti, where the muscles separate completely.



you should perform moves which work the core as a whole, such as the plank, functional exercises and Pilates-type exercises.



If you experience this, seek advice from a post-natal exercise specialist before you embark on an exercise programme.

Believe it or not, neck pain can also be relieved this way. As your spine runs all the way from the base of your skull to your pelvis, whatever happens lower down can have a knock-on effect higher up.

The same principle can be applied to your upper body too. The stronger you are, the better your body can cope with the demands of carrying your baby.

BACK PAIN IN PREGNANCY

POSTURE

Take care how you lift and hold your baby. If you're lifting from the floor, squat down to avoid bending your back.

When lifting out of a cot or buggy or taking the car seat out of the car, try not to twist your body and keep your body as close as possible to your baby when you lift.

Avoid carrying your baby on your hip. This creates an awkward bend in the spine and will only aggravate back pain further.

Baby carriers are great (if positioned correctly). Think of carrying them on your front up to 6 months and your back after 6 months.

If you're breastfeeding, bring the baby up to your breast rather than bending over your baby.

Similar goes for bottle feeding, use pillows to prop your baby up so you're not hunching over.

Many buggies and prams have adjustable handles. If yours does, make sure they're not positioned too low so you're bending down whilst pushing.



Avoid carrying your baby on your hip. This creates an awkward bend in the spine and will only aggravate back pain further

4 MYTHS

About Back Pain

Although well-meant, there are some common misconceptions out there which in many situations, really won't help you at all. In fact, some can make it worse.

1. REST

Probably the most common 'advice' people hear.

This is what we used to get told to do when in fact, during extended periods of inactivity, muscles can weaken and grow stiff and ligaments and tendons can also lose flexibility which leaves you more vulnerable to further injury.

Just like us, our tissues (including our intervertebral discs) need nutrients to stay healthy.

By moving, we promote good circulation which in turn delivers nutrients and oxygen to the tissues to help them repair

“ *during extended periods of inactivity, muscles can weaken and grow stiff.* ”



4 MYTHS ABOUT BACK PAIN



2. ICE THE PAIN

As soon as ice touches your skin, your muscles will immediately tense against the chill.

For a back which is already tense, and potentially in spasm, heat is often preferable to cold.

A warm bath, hot water bottle or heat patch can help the muscles relax and reduce any spasms.

Cold is better used for inflammation, when you need to reduce swelling.

3. DON'T EXERCISE

Now obviously this depends on how acute your pain is and the severity of your injury but when you can, and within pain-free limits, exercise is one of the best things for back pain.

The weaker your muscles, the more vulnerable you are to pain and further damage.

Keep your body mobile, and work on activating and strengthening your deep core muscles to strengthen your spine's support network.

“ For a back which is already tense, and potentially in spasm, heat is often preferable to cold

4. ONCE YOUR BACK HAS 'GONE', YOU'LL ALWAYS HAVE BACK PROBLEMS

If you don't act to help yourself, then maybe. But nobody should just accept that back pain is something they must live with forever.

Most back pain can be helped by strengthening the core and back.

One study found 80% of patients with back pain had weakened muscles in their back.

It's not known whether the weakness was a cause or result of their pain, but by strengthening these muscles, and working on maintaining this strength it's possible to significantly reduce pain or eliminate it altogether.

Exercise Library



Core Activation

“ A fundamental part of any core strengthening work is engagement of the core muscles.



A fundamental part of any core strengthening work is engagement of the core muscles.

As well as applying it to traditional exercise, it can also be easily applied to everyday activities, enabling you to use these muscles as a foundation for movement and perform functional exercise throughout the day.

This technique is pretty tricky and does take lots of practice to master.

It'll feel quite unnatural at first and you'll need to do it quite a few times before you get the hang of breathing whilst holding the contraction but carry on with the counting out loud and it'll click eventually.

The idea is that once you know how to engage, you can use this technique to protect and strengthen your back whenever you lift, be it a weight in the gym, a small child or a full kettle for your morning cuppa.

The Technique

1. Lie on your back with bent knees and feet flat on the floor
2. Locate the top of your hip bones, walk your fingers diagonally down a few centimetres and press in
3. Cough and feel the muscles contract. It'll feel like it's pushing your fingers out
4. Cough again and this time, try to hold the contraction for a few seconds, then relax
5. Repeat step 4 but this time, think about keeping the back of your rib cage pressed into the floor at the same time
6. Repeat step 5, counting to 10 out loud whilst holding the contraction
7. Practice, practice, practice

THE PLANK



TECHNIQUE TIPS:

- Keep your elbows in line with your shoulders
- Don't let your back sag down

How to do it:

1. Lying face down, push up into position taking your weight on your toes and elbows
2. Engage your core, pressing your fingers a few cms in from your hip bones to make sure your core is contracted
3. Push through your elbows so you're not retracting your shoulder blades or 'dipping' your upper body
4. Tuck your pelvis underneath you slightly and maintain a very slight bridge shape in your back, taking care not to sag down
5. Hold for 30 secs-1 minute, or as long as you can without losing your core engagement or form
6. Rest for 1 minute and repeat 3 times

“ Hold for 30 secs-1 minute, or as long as you can without losing your core engagement or form ”

PLANK PROGRESSION



TECHNIQUE TIPS:

- Keep your shoulders level as you raise your arm
- Don't let your hips rotate

How to do it:

1. Lying face down, push up into position taking your weight on your toes and elbows
2. Engage your core, pressing your fingers a few cms in from your hip bones to make sure your core is contracted
3. Push through your elbows so you're not retracting your shoulder blades or 'dipping' your upper body
4. Tuck your pelvis underneath you slightly and maintain a very slight bridge shape in your back, taking care not to sag down
5. Keeping your shoulders and hips level, raise one arm in front, hold and then repeat on the other side
6. Repeat, performing 8 on each side, or as many as you can without losing your core engagement or form

“ Perform 8 on each side, or as many as you can without losing your core engagement or form ”

LEG BALANCE



How to do it:

1. From a standing position with your feet hip-width apart, engage your core
2. Using your arms for balance, bend one knee to raise the leg
3. Keep your core engaged to maintain your balance

TECHNIQUE TIPS:

- Keep your supporting knee slightly bent
- Engage your core

“ Hold for 30 secs-1 minute, or as long as you can without losing your core engagement or form ”

LEG BALANCE PROGRESSION



How to do it:

1. From a standing position with your feet hip-width apart, engage your core
2. Using your arms for balance, bend one knee to raise the leg
3. Keep your core engaged to maintain your balance
4. Hinge forwards from your hips, keeping your supporting knee bent
5. Reach down with your arms and when your hands reach the floor (or you've gone as far as you can comfortably), push through your supporting leg to return to a standing position
6. Repeat 6 times on one leg and then swap sides

“ Repeat 6 times on one leg and then swap sides

TECHNIQUE TIPS:

- Hinge from your hips
- Bend your supporting leg

4-POINT KNEELING



TECHNIQUE TIPS:

- Keep your hands in line with your shoulders
- Don't let your hips or shoulders rotate

How to do it:

1. Position yourself on all-fours with your knees in line with your hips and hands in line with your shoulders
2. Engage your core
3. Keeping your shoulders and hips level, slowly stretch one arm out in front and at the same time, the opposite leg out behind you
4. Return to your starting position and repeat the other side
5. Do 8 each side, or as many as you can whilst keeping your core engaged and maintaining correct technique

“ Do 8 each side, or as many as you can whilst keeping your core engaged and maintaining correct technique ”

STATIC LEG HOLD



TECHNIQUE TIPS:

- Don't let your back arch
- Keep a slight bend in your knees

How to do it:

1. Lie face up, feet flat on the floor and engage your core
2. One at a time, raise your legs with a slight bend in your knee
3. Ensure your back isn't arching
4. Making sure your core is still engaged throughout, hold for 30 secs or as long as you can whilst keeping your core engaged and maintaining form
5. Lower your legs down to your starting position one at a time
6. Rest for 1 minute and repeat 3 times

“hold for 30 secs or as long as you can whilst keeping your core engaged and maintaining form”

CORE STABILISATION



Progression 1



Progression 2

How to do it:

1. Place a towel, soft pilates ball or stability disc in the small of your back
2. Engage your core and raise your upper body from the floor
3. Extend your arms out with your palms facing in to the side of your knees
4. Hold for 30 secs-1 minute or as long as you can whilst keeping your core engaged and maintaining form

PROGRESSION 1:

5. One at a time, raise your legs, keeping a slight bend in the knee
6. Hold for 30 secs-1 minute or as long as you can whilst keeping your core engaged and maintaining form

PRGRESSION 2:

7. One at a time, lower one foot to the floor, keeping your core engaged and hips stable
8. Repeat the other side and do 8 on each leg

TECHNIQUE TIPS:

- Keep your core engaged
- Keep your neck and spine in alignment

SQUATS



How to do it:

1. Start in a standing position. Place a yoga block or thin book underneath your heels to achieve a deeper squat
2. Engage your core
3. Squat down, keeping your back straight and not allowing your knees to come forward past your toes
4. As you squat down, raise your arms in front to maintain balance
5. Push into your heels to return to your starting position
6. Repeat 16 times or as many times as you can whilst keeping your core engaged and maintaining correct technique

“ Repeat 16 times or as many times as you can whilst keeping your core engaged and maintaining correct technique

TECHNIQUE TIPS:

- Push up through your heels
- Keep your chest lifted

BACK EXTENSION



TECHNIQUE TIPS:

- Keep your head face down
- Relax your legs and buttocks as you lift

How to do it:

1. Lie face down with your elbows out to the side and hands by your ears
2. Engage your core
3. Keeping your legs and buttocks relaxed, raise your chest and shoulders a few inches from the floor, keeping your head looking down
4. Hold for a few seconds
5. Return to your starting position
6. Repeat 16 times, or as many times as you can whilst keeping your core engaged and maintaining good posture

“ Repeat 16 times, or as many times as you can whilst keeping your core engaged and maintaining good posture ”

BACK EXTENSION PROGRESSION



How to do it:

1. Lie face down with your elbows out to the side and hands by your ears
2. Engage your core
3. Keeping your legs and buttocks relaxed, raise your chest and shoulders a few inches from the floor, keeping your head looking down
4. Hold for a few seconds
5. Stretch your arms out in front, no higher than your ears
6. Return to your starting position
7. Repeat 16 times, or as many times as you can whilst keeping your core engaged and maintaining good posture



Repeat 16 times, or as many times as you can whilst keeping your core engaged and maintaining good posture

TECHNIQUE TIPS:

- Keep your head face down
- Relax your legs and buttocks as you lift

Stretch Library



PSOAS STRETCH



TECHNIQUE TIPS:

- Gently push your hips forwards
- Keep your back straight

How to do it:

1. Kneel on the floor and lean forwards, pushing your hips forwards as you do so
2. Make sure your front foot is far enough in front that your knee doesn't move in front of your foot
3. Hold until you feel the stretch down in the front of your hip
4. To increase the stretch, raise the arm on the same side as the back leg
5. Bend slightly to the side of the front leg and rotate your body around



Hold until you feel the stretch down in the front of your hip

PSOAS STRETCH



TECHNIQUE TIPS:

- Gently push your hips forwards
- Keep your back straight

How to do it:

1. Kneel on the floor and lean forwards, pushing your hips forwards as you do so
2. Make sure your front foot is far enough in front that your knee doesn't move in front of your foot
3. Hold until you feel the stretch down in the front of your hip
4. To increase the stretch, raise the arm on the same side as the back leg
5. Bend slightly to the side of the front leg and rotate your body around



Hold until you feel the stretch down in the front of your hip

GLUTE STRETCH 1



TECHNIQUE TIPS:

- Keep your back straight
- Pull your knee in towards your chest

How to do it:

1. Sit tall with your legs out in front of you
2. Cross one leg over the other
3. Take hold just below your knee with one hand and your ankle with the other
4. Gently pull your knee in close to your chest until you feel the stretch in your buttock
5. Use your hand on your ankle to move your leg into the position which best stretches the area you need



Gently pull your knee in close to your chest until you feel the stretch in your buttock

GLUTE STRETCH 2



TECHNIQUE TIPS:

- Keep both shoulders on the mat
- Rotate from your low back

How to do it:

1. Lie on your back with both feet flat on the floor and arms relaxed at your side
2. Engage your core
3. Keeping your core engaged, lower both knees out to the side, letting the knee move higher than the bottom knee until you feel a stretch in your buttock
4. Make sure your shoulders both stay on the floor
5. Hold for 30 secs-1 min

“ lower both knees out to the side, letting the knee move higher than the bottom knee until you feel a stretch in your buttock ”

About the Authors

“ Lydia and Andy have helped thousands of people and are passionate about helping them understand that back pain needn't be something you have to live with.



Lydia and Andy Sherlock are back pain specialists who own Core Strength Studios in Bristol, where along with their team, they help people prevent and reduce back pain and get back to doing the things they love.

Lydia started her career in rehabilitation in 2001, when she qualified as a sports therapist.

Andy studied spinal rehabilitation at the University of Florida and has been working with people with back pain since 2000.

Since opening the studio in 2007, Lydia and Andy have helped thousands of people and are passionate about helping them understand that back pain needn't be something you have to live with.



Working with specialist MedX rehabilitation equipment which isolates and strengthens the back muscles, the team at Core Strength Studios support people to get stronger and have the confidence to move more freely and enjoy the activities they thought impossible because of their back pain, even being described as 'miracle workers' on more than one occasion!