

PAIN-PROOF YOUR BACK

by DR HELEN PILCHER

With cases of vertebral aches surging, most common remedies don't stand up to scientific scrutiny. However, recent research could help you swerve the biggest spinal traps and finally put the problem behind you

Back pain is on the rise. Around the world, a staggering 619 million people – around one in 13 of us – suffer from back pain. By 2050, it's expected that number will rise to around 843 million.

For some, it steals the sunshine from life. Sleep can become fractured, mental health becomes eroded and once-normal activities, such as playing with the kids or going to work, can become utterly impossible.

Things are now so bad, that back pain has become the leading cause of disability in the world and it's been called a 'global epidemic' by the independent journal *The Lancet Rheumatology*. In the UK, it costs the NHS around £5 billion every year, while in the US, the cost of medical treatment and lost productivity amounts to an eye-watering \$635 billion.

But here's the thing: mistruths about back pain can be found everywhere, from the ergonomic furniture industry to those workplace health and →

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“ACUTE BACK PAIN
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→ safety box-lifting demonstrations. It's little surprise that the cause of the aches and – more importantly – the fixes, are often misunderstood.

Fortunately, we've got your back. Whether you can't get out of bed without groaning or you're looking to protect your posterior for days ahead, here's a science-backed explainer that could finally relieve your pain.

HAVE I DAMAGED SOMETHING?

This is a common misconception. Most of the time, back pain doesn't mean there's something physically wrong with your spine or back. 'Pain' doesn't equal 'damage'. And 'more pain' doesn't equal 'more damage.'

Falls and accidents can lead to sprains and fractures, and very occasionally – in less than one per cent of those with back pain – there may be some sort of underlying disease, such as an infection, arthritis or cancer.

But the vast majority of all back pain is 'non-specific', meaning that tests fail to find any signs of structural injury or disease.

Most of us will experience back pain at some point. It can affect anyone, of any age, but it becomes more common as we get older. Intermittent episodes of

back pain are a normal part of life, like having a headache or the odd day when you feel a bit sad. What's not normal is when the pain continues long after whatever triggered it has gone.

Acute back pain tends to resolve on its own, within weeks to months. Chronic pain, in contrast, is any pain which persists for more than three months. Figures vary, but between 4 and 25 per cent of people with acute back pain go on to develop chronic pain. This can be harder to manage, but there are many things that can help.

DO I ACTUALLY NEED TO SEE A DOCTOR?

“Most back pain is not serious or worrying,” says Ruth Newsome, who is a specialist spinal physiotherapist at

LEFT Hot water bottles can help with stiffness or muscle spasms, while an ice pack, or similar, can ease swelling

RIGHT Pain can be managed with over-the-counter drugs

Sheffield Teaching Hospitals NHS Trust. If you have no other symptoms, give it four to six weeks before visiting your doctor. During that time, pain can be managed with anti-inflammatory drugs, such as ibuprofen, and by trying to keep moving. A bag of frozen peas wrapped in a towel can help with pain and swelling. A hot water bottle can help with stiffness or muscle spasms. Visit your pharmacy if you need more advice.

'Red flag' symptoms to watch out for include numbness or tingling in the lower body, difficulty peeing, chest pain, unexpected weight loss and a persistent fever. If you have any of these symptoms, they *might* be an indication of some other problem, so don't →



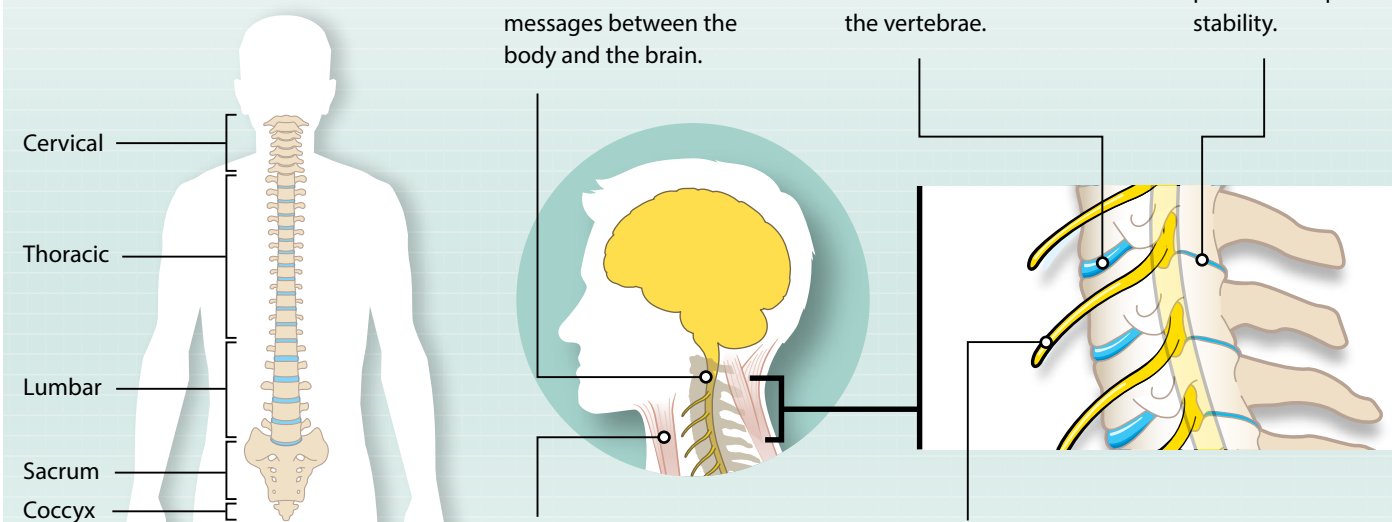
THE ANATOMY OF THE SPINE

The spine is made of 33 stacked bones called vertebrae, arranged into five regions.

The spine protects the spinal cord, which runs through a hole in the middle and carries messages between the body and the brain.

Discs are little cushions of tissue that sit between each vertebra. They act like shock absorbers for the vertebrae.

Facet joints are small joints located between each vertebra. They provide the spine with stability.



Muscles and ligaments provide strength and stability to the spine and upper body.

Nerves leave the spinal cord via nerve roots, and travel on to other parts of the body.

As you get older, the structures of your spine, such as the vertebrae, discs and ligaments, age too. This is normal and is unlikely to be a cause of back pain.

Vertebrae in the sacrum and coccyx are fused into discrete structures.

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“STUDIES SHOW THAT IMAGING RARELY IMPROVES THE OUTCOME OF PATIENTS WITH BACK PAIN. GUIDELINES IN THE US AND UK CAUTION AGAINST ITS OVERUSE”

→ hang about. Go and see a doctor straight away. Be reassured though, most back pain isn't emblematic of a serious problem.

CAN GETTING A SCAN BACKFIRE?

People with back pain often want a scan. X-rays can reveal fractures and other bone abnormalities, while MRI scans offer a more detailed look at the bones and surrounding soft tissues. Scans are done to rule out rare issues like neurological conditions or cancer, but



they also create problems of their own. As we get older, our spines do change. Like grey hairs and wrinkles, this is a normal part of the ageing process. MRI scans are very sensitive. They pick up on these changes, highlighting features such as wear and tear, torn ligaments and bulging discs.

Often, these features are presented to patients as 'abnormalities' that need to be fixed, but although these issues are common in people who have back pain, they're also common in people who don't have back pain. They're incidental findings rather than pathological problems – and, according to a major review in the *European*

ABOVE Any form of exercise is good for your back, from walking to yoga to swimming

ABOVE RIGHT Misconceptions about posture and back pain have helped create a lucrative market for ergonomic products



Journal of Pain, they don't predict a person's current or future pain. If they're not explained properly, these benign results can trigger an unhelpful chain of events. Patients can feel scared, which makes their pain worse. They become less active, which makes their pain worse. And they may end up having invasive treatments, which come with their own risks.

For instance, a 2020 study of around 400,000 US primary care patients found that those who had an MRI scan for back pain were more likely to then take opioids and have back surgery than those who didn't have a scan. What's more, the same group also suffered from *more* pain one year down the line.

Studies show that imaging rarely improves the outcome of patients with back pain. Guidelines in the US and UK consistently caution against its overuse and yet, in the last 20 years, MRI scans for back pain have become more

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LEFT Rather than helping, having an MRI scan for back pain could make things worse

common. This is partly because doctors worry about 'missing something' and being sued, and partly because patients think that scans will expedite their diagnosis. "But you don't need to scan to know what you're treating," says Newsome. "The clinical history gives you a clear picture. It's just that people find this hard to accept."

WHAT CAN I DO TO LOOK AFTER MY BACK?

Move. Movement helps to prevent back pain, and movement helps to ease back pain. The internet is full of advice on *the* best exercise to do, but there's no evidence to suggest that any one specific exercise or form of exercise is any better than any other.

"The best exercise is the one that a person will do", says physiotherapist and back pain specialist Prof Kieran O'Sullivan from the University of Limerick. "There's no point suggesting swimming if a person hates swimming, or going to the gym if a person doesn't like going to the gym." Instead, people need to find something that's enjoyable, accessible and affordable. Then they'll be more likely to stick at it.

Even walking will do. "People are often put off because they think that exercise will make their pain worse, but it's still safe to move, even if you're in pain," says O'Sullivan.

If movement is painful, over-the-counter pain relief, like paracetamol or ibuprofen, can help to get you started. Just begin with what you can manage, take breaks as needed and build up slowly. Physical activity increases muscular strength and boosts the flow of blood and nutrients to the soft tissues in the back, which can help to speed healing and reduce stiffness.

WHAT DOESN'T HELP?

As research has shown, there's a common belief among patients and healthcare professionals that back and neck pain is caused by sitting, standing or bending incorrectly. Many people →





“LIFTING WITH A CURVED BACK IS NO MORE LIKELY TO LEAD TO BACK PAIN THAN LIFTING WITH A STRAIGHT ONE”

→ think that slouching is bad and that carrying heavy objects is a recipe for disaster. This has fuelled the development of an entire industry, peddling ergonomic products such as chairs, insoles and hoists, and yet there's little evidence to suggest that any of these things make much of a difference.

For starters, studies performed over the last two decades have found no relationship between slouching and spinal pain. 'Slouchers' are no more likely to develop back pain than 'non-slouchers.' Nor has any single posture been found to protect people from back pain or make them more likely to develop it.

Lifting with a curved back is no more likely to lead to back pain than lifting with a straight one. Indeed, manual workers who don't have back pain are more likely to lift with a round-back posture, and manual workers with back pain tend to lift with a straighter back.

Further studies have also shown that workplace manual handling training, where people are taught to bend and lift 'correctly', doesn't help to reduce back pain or back injury. Far from being bad for spinal health, lifting may actually help to prevent back pain, because it helps to strengthen muscles and bones.

HOW MUCH OF BACK PAIN IS 'IN YOUR HEAD'?

It may sound pedantic, but all pain is in your head. And that's simply because the brain creates the experience of pain. When we have a physical injury, like a broken bone, the brain generates pain to alert us to the problem. So, pain is like an alarm.

Sometimes, however, the brain continues to generate pain even when there's no physical injury. This is like

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a false alarm. The pain it produces is still real, but the good news is, we have more control over this process than many people realise.

Pain Reprocessing Therapy (PRT) is a psychological treatment for back pain. It involves challenging people's beliefs about pain – teaching them that pain doesn't always indicate danger, that their body is safe, but their brain has generated a false alarm.

In the first randomised clinical trial of PRT, published in 2021, two-thirds of people who had the treatment were pain-free or almost pain-free one year on, compared with one-fifth of those in the control groups. MRI scans of their brains also revealed less activity in key pain-related regions, indicating that their brains had dampened down the production of pain signals.

“We get people to tell themselves a different story about their pain,” says Dr Yoni Ashar from the University of Colorado, who led the study. “They go from ‘my back hurts because of degenerative disc disease’ to ‘my back hurts because of a false alarm that I can change.’”

This can be incredibly powerful. In a follow-up study, Ashar showed that the more people shifted their narratives

ABOVE People undertaking cognitive functional therapy for chronic back pain are taught management techniques that help them to return to activities, such as gardening

LEFT Contrary to popular belief, lifting may help prevent back pain, as it strengthens muscles and bone

about the causes of their pain, the more improvement they had.

HOW CAN I SHIFT MY PERCEPTION?

Pain is influenced by many different things. This includes mental processes, such as fear, anxiety and unhelpful beliefs about pain. Stress can make pain worse, as can lack of sleep and certain lifestyle factors, such as poor diet and inactivity. Societal influences, such as relationship problems, work pressures and financial worries are all important too. They can affect the way that we feel, which in turn, can affect our pain.

“But if we only look at them as a collection of bones and joints, we do

people with back pain a disservice,” says O'Sullivan. The best treatment then, is one that takes as many of these influences into account as possible.

Cognitive functional therapy (CFT) is one approach that tries to do this. CFT is a method that focusses on psychological, physical and lifestyle factors. The content is different for everyone, depending on their needs and history. Patients are helped to recognise the unique constellation of factors that influence their pain, and to understand that pain isn't always a sign of damage. They're offered guidance on eating and sleeping, as well as how to relax and move their body in ways that feel safe. Patients set their own goals, like being able to walk the dog or water the garden, and are then coaxed towards them, culminating in a skill set that enables them to manage and minimise their pain.

O'Sullivan helped to organise a large clinical trial of CFT in Australia, involving 492 patients with chronic lower back pain. One year on, they had less pain and were significantly less restricted by it than a control group of patients receiving standard care.

This is encouraging because standard interventions, such as exercise and some psychological therapies, tend to have modest effects of shorter duration. Patients in the CFT trial were also more confident, less frightened and had a more positive mindset about their back pain. **SF**

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