

2

What is back pain?

Key Points

- ◆ Understanding your pain can be the key to tackling it
- ◆ There are fundamental differences between acute pain and long-term pain
- ◆ In long-term back pain, the link between damage and pain is often not very clear
- ◆ Having back pain not only affects your body but how you manage your life and relationships with others

Introduction

The question ‘what is back pain?’ is understandable but the answer can be complicated. This chapter discusses:

- ◆ why people feel pain at all
- ◆ the difference between acute and long-term pain
- ◆ how the body repairs itself
- ◆ how pathways can develop that promote long-term back pain.

It also describes the definitions of pain used both in everyday life and in scientific literature which demonstrate how pain affects us in so many different ways. Understanding the origins of a problem usually go a long way to managing them better.

Case study Part 1

Charles did not understand why he had pain that would not go away. In school he played rugby and cricket. He was a good cross country runner. He continued rugby at university. In his early twenties, he started to have back pain which would be particularly problematic when he had to sit for a long time in lectures. He decided to try and seek some help and, after a few medical consultations, he underwent an operation to his lumbar spine

where two of the vertebrae were fused together. He was very pleased with the results as his back pain was much better. However, after about a year, the same symptoms started creeping back. Pain when standing too long, sitting too long, and when he tried to go running to keep fit.

Why do I have pain?

Pain is a biological development so that more complex organisms can react to protect themselves from a threat. As an example, some creatures that are made of only one single cell respond to touch, temperature or changing environment by moving away. Humans are one of the most highly developed biological creatures. We not only react rapidly to unpleasant stimuli (like withdrawing our hand by reflex when we accidentally touch something very hot) but also learn behaviour based on our past experiences.

Acute pain and the repair process

Pain itself can be separated broadly into two types:

- 1 *acute pain*—pain that is short lived and from which you are likely to recover
- 2 *chronic or long-term pain*—pain that goes on for a long time.

Acute pain occurs in response to a tissue injury where there is usually tissue damage and associated inflammation, followed by a process of repair and healing that lasts for days or months. The inflammation may or may not be visible. Chemical signals, transmitters, specialized cells, nerves and receptors are all involved in the system which is there to warn of danger and then protect injured parts until they have been put back together as best as the body is able.

In the back, an acute pain may arise from a torn muscle or intervertebral disc. The body will sense damaged cells because the inside contents of cells are released ; other monitoring cells which travel throughout the body pick up this and 'swarm' to the damaged area to start the process of repair. Swelling and tightness often occur as the local fluid levels change with more water in the area than normal (oedema or swelling). Local acidity levels and local oxygen levels may also change. The nerves will sense all these changes and have local responses in controlling blood flow as well as sending messages to the spinal cord and the brain to increase the protection of the damaged area at a reflex and a conscious level.

Depending on the size of the injury, this healing process may take a few days to a few months, but in most cases, by six months healing is complete and tissues have remodelled themselves. This whole process is aided by movement, exercise and returning to normal activities.

The origins of long-term pain

Long-term pain often starts with an episode of acute pain; there may be an injury just like that described above. The process of repair will start and complete, but pain persists for months or years after the triggering event. We now understand that this is not a helpful process; it is likely to be a fault in the nervous system that promotes continuing pain rather than healing. Messages about pain are being transmitted even though there is no ongoing damage that needs to be repaired or danger that needs to be protected, for example an oversensitive alarm that is ringing and ringing although there is no crime in progress.

A lot of scientific study is trying to discover why this process happens, to see if there are ways of avoiding it. There are a number of changes that we know occur in the nerves travelling to the limbs and trunk, the nerves that join up with other nerves within the spinal cord, the nerves that process messages in the brain, the absolute numbers of nerves involved, and the nerves that send messages back to the spinal cord to control feedback mechanisms. So far, medicine is not very good at changing the way nerves promote long-term pain, but a better understanding of the mechanisms may lead to future discoveries of new drugs and other treatments.

Long-term pain is likely to be a fault in the nervous system that promotes continuing pain rather than healing. Messages about pain are being transmitted even though there is no ongoing damage.

Definitions of pain

There is a textbook definition of pain used by the International Association for the Study of Pain which is widely quoted: 'an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage'. Although this uses rather scientific terms, it is a useful definition and there are some key features to look at more carefully:

- ♦ it is accepted that pain causes an emotional experience as well as a sensory one;
- ♦ actual tissue damage may not be evident; and
- ♦ the link between damage and pain may not be strong, i.e. it is only described as an association.

This last point is interesting and important. In long-term back pain, the link between damage and pain is often not very clear. This is because the changes in the nervous system have amplified the pain and caused it to be a persistent problem, even though the injury or damage has long since healed.

People's descriptions of pain

When people are asked to describe pain, they often struggle both because it can be described in so many ways and because it is very hard to put the experience into words. The experience of pain also changes depending on the time of day, whether you are hot or cold, your mood and what you are doing at the time. As a result, there is a plethora of words to describe pain and none of these are wrong.

Doctors often ask you to describe your pain as sometimes the answers you give help them consider certain structures that may be the cause. The terms 'burning', 'tingling', 'electric' or 'itchy' can mean that there is nerve damage in the area of pain; 'tightness', 'aching' or 'weakness' can describe muscle pain. Other words describe how your pain makes you feel. The most important thing for you to remember is that these are descriptive words and they are not always linked to what has happened. They are all helpful in understanding how the pain affects you.

It is also the case that people are unable to describe their pain. In the text box is what looks like a jumble of words. They are in fact all words which have been used by people to describe their pain. It demonstrates how pain affects people at physical, emotional and sensory levels.

Words people use to describe their pain

Excruciating nagging nauseating discomforting distressing horrible
agonizing dreadful torturing annoying troublesome miserable
intense unbearable spreading radiating penetrating piercing tight
numb drawing squeezing tearing cool cold freezing suffocating
fearful frightful annoying electric buzzing cruel vicious
killing wretched blinding itchy smarting stinging dull sore
hurting aching heavy tender mild taut rasping splitting
tiring exhausting sickening pinching pressing gnawing cramping
crushing tugging pulling wrenching hot boring scalding
searing tingling flickering quivering pulsing throbbing beating
pounding jumping flashing shooting pricking boring drilling
stabbing lacerating sharp cutting lacerating

Back pain encompasses more than just the muscles, joints and nerves

When you begin to describe back pain in full, it is not just physical things that come out in the description; your back pain is not just about your back but



Back pain: the facts

about the whole of you. Clinicians who work in this field have a special term for this and call it the *biopsychosocial* model (see Table 2.1). Needless to say:

- ◆ *bio* refers to biological aspects of pain
- ◆ *psycho* the influence of psychology on pain experiences, and
- ◆ *social* is the aspect of pain where the sufferer interacts with the people around in society.

Focusing on any one aspect of the *bio*, *psycho* and *social* may not lead to as effective an improvement as if you can think about all three of its parts.

Tackling back pain effectively means:

- ◆ understanding how your back works
- ◆ considering the treatments and medications that might help
- ◆ improving movement, exercise and stretch levels
- ◆ tackling unhelpful thoughts and feelings
- ◆ making sure that your own situation is as good as it can be to help you move forward (in the home, at work or out and about).

These issues are developed further throughout this book.

Why do some people seem to experience pain differently to others?

The simplest answer to this question is that everyone is different. Men and women feel pain a little differently. In some cultures, the number of people

Table 2.1 The biopsychosocial model of pain

Biopsychosocial model of pain	Examples of effects
Bio	I find standing in a queue painful I used to love exercising regularly but now it just hurts I can't go on holiday because of all the sitting needed to get there
Psycho	I worry that I will damage my back by exercise I am frightened my back will break I get so depressed when I can't play with my youngest child
Social	My friends don't understand why I don't go out any more I had to give up work because my work as a telephonist needed me to sit for too long I used to bring in a decent salary and now I am dependent on my partner and benefits



complaining of long-term pain is different from others. There are also major genetic problems that mean that there are a few families of people that feel no pain at all. This gives rise to its own problems as people often end up being seriously injured because they do not realize they have been hurt.

There are also social differences amongst those who feel pain. People who are self-employed appear to report less pain than those who work for an employer. We also know that people who are busy with regular jobs fare better than people who are not. All of these differences are interesting as they raise questions: answering the questions can lead to potentials for helping people.

Case study Part 2

At the same time that Charles' pain began to come back after surgery, he had moved and started work as a junior producer for the BBC. He had begun struggling at work as he had to sit for long periods of time working on computers. His new GP advised him to attend a local pain clinic. At the clinic he received more advice about his back pain which enabled him both to better understand his condition and to make plans he was happy with. He worked towards increasing the exercise he could tolerate and he also found he was better able to manage his working life. His general happiness was much improved.

Bringing the components of long-term pain together

Many people, including some medical staff and clinicians, focus on one part of the body, often on the things that can be seen on a scan or an X-ray. However, medicine alone often cannot fix the reasons for developing long-term pain because the roots of the problem are related to medical, psychological and social issues and each aspect needs attention. Additionally, medicine is not able to refashion or restructure nervous systems that have adapted to a way of working that incorporates long-term pain at the level of cells or the connections between nerve cells.

In long-term pain, vicious cycles are often found where a small problem becomes magnified and maintained. Added to these there may be additional pressures that make the whole situation worse, such as:

- ◆ being unable to work leads to pressure from an employer
- ◆ a reduced income leads to pressures at home
- ◆ employment problems will also lead to social consequences (e.g. the roles at home, or perceptions amongst wider family and friends)

Back pain: the facts

- ◆ income, employment and social problems will lead to an effect on mood
- ◆ a low mood can worsen the experience of pain.

Long-term pain is a major health issue because so many people in the world have it. In a number of countries whose healthcare systems are similar, around 20 per cent of the population suffers long-term pain with a slight preponderance of women. Governments, everyone involved in healthcare and people with back pain would be pleased if those who might be at risk of getting long-term pain could be targeted effectively in an early stage to help them learn improved techniques for managing their situation. The right way to address long-term back pain is by using an holistic approach which is backed up by both experience and scientific evidence.