Arthritis Research UK

Self-help and daily living

Pain and arthritis

Pain and arthritis

This booklet provides information and answers to your questions about this condition.

Arthritis Research UK produce and print our booklets entirely from charitable donations.

What is pain?

Many people with arthritis live with pain for years. This booklet explains what pain is and how the brain senses pain. It also describes some common conditions that can cause pain in and around joints, as well as the different methods for helping people to control long-term (chronic) pain.

At the back of this booklet you'll find a brief glossary of medical words – we've underlined these when they're first used.

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At a glance
Pain and arthritis

There are now many approaches available to help manage pain including drugs, physical treatments and coping strategies.

What is pain?

Put simply, pain is a protective mechanism that alerts the brain when damage has occurred. But pain isn't just a sensation, it has emotional effects too – making us feel upset or distressed. Pain may continue when the damage seems to have gone. This is a feature of some chronic pain syndromes.

What causes it?

Pain may be caused by:

- a physical injury or damage to body tissues
- chemicals produced by inflammation
- damage to the nerves or nerve endings.

The most common causes of chronic pain in joints or muscles are:

- osteoarthritis
- rheumatoid arthritis
- neck and back pain
- chronic pain syndromes.

What can affect the severity of my pain?

The pain severity can be affected by a number of factors including:

- how much you concentrate on the pain
- enjoyable activities, which can take your mind off the pain and make it more manageable
- unhappy feelings, anxieties or depression, which can worsen pain
- prescription drugs (that have a direct effect on the brain, chemically reducing the impact of pain).

How can I manage my pain?

There are a number of approaches available to help you manage your pain:

Drugs:

- painkilling drugs ranging from paracetamol to codeine and up to stronger options like oxycodone, slow-release morphine or patches containing fentanyl or buprenorphine
- non-steroidal anti-inflammatory drugs (NSAIDs) and coxibs, which are painkillers as well as having an anti-inflammatory action
- corticosteroids, often called steroids for short, given as tablets or by injection

- drugs for nerve pain and chronic pain syndromes
  - tricyclic antidepressants, for example amitriptyline or dosulepin, improve sleep and help the brain to control sensations from upper body and limbs
  - gabapentin, carbamazepine and pregabalin can help control some types of pain, especially if caused by nerve damage.

Other pain relief treatments and therapies:

- a heating pad or hot-water bottle
- an ice pack or cold-water compress
- massage (with or without creams that create a sense of warmth)
- rest and good-quality sleep
- transcutaneous electrical nerve stimulation (TENS)
- acupuncture
- psychological techniques for example group discussions and cognitive behavioural therapy
- relaxation techniques for example relaxation tapes, yoga, the Alexander technique and hypnosis
- physiotherapy, osteopathy and chiropractic use techniques including:
  - massage, manipulation and stretching
  - technologies such as ultrasound, laser or interferential treatment
  - exercise programmes.

How can I help myself?

Unfortunately, for some people pain is long-lasting, doesn't respond fully to drugs or physical treatments, and can't be cured by surgery. In this case it's worth thinking about lifestyle changes, such as:

- learning to rest sensibly (but not giving up all exercise)
- avoiding certain activities
- asking for help
- using gadgets and home adaptations.

A doctor, physiotherapist, social worker or occupational therapist can offer expert help and advice with these changes.

What should I do if my pain is severe?

For a small minority of people pain can be severe and disabling. This can result in a vicious circle of pain, anxiety and depression, and becoming physically unfit. People affected in this way should be referred to a pain management clinic to learn new ways to cope with pain.

What is pain?

Although everyone understands what we mean by the word pain, it's still difficult to define. Put simply, it's usually a protective mechanism that alerts the brain when damage has occurred. Pain isn't just a sensation, it has emotional effects too – making us feel upset or distressed (see Figure 1).

Figure 1 The causes of pain

Pain may be caused by:
Physical injury or damage to body tissues, for example damage to the joint cartilage in osteoarthritis.
Chemicals produced as a result of inflammation, for example in rheumatoid arthritis. Our bodies have specialised nerve endings that detect temperature and chemical changes or mechanical stresses. These chemicals activate specialised nerve endings which send pain signals via the spinal cord to the brain.
Damage to nerves or nerve endings. This causes the nerves to send pain signals to the spinal cord spontaneously without needing a specific stimulus, or in response to something that wouldn't normally hurt, such as gentle stroking of the skin. This sometimes happens in complex regional pain syndrome (reflex sympathetic dystrophy) and peripheral neuropathy (a common problem in diabetes).

Sometimes it's difficult to explain the exact cause of long-term (chronic) pain and this can also make it difficult to treat effectively. This type of chronic pain can sometimes be felt all over the body (chronic widespread pain), as in fibromyalgia, for example.

See Arthritis Research UK booklet *Fibromyalgia.*

Such conditions are a challenge to both the patient and the doctor. The fact that it's hard to explain where the pain is coming from doesn't mean the pain is imaginary or psychological. However, psychological factors can affect the way in which the brain senses physical pain (see section 'Other pain relief treatments and therapies').

Pain and the brain

The spinal cord has special 'gate' mechanisms that interfere with pain messages coming from the nerves, and may block or deflect them so the pain signal that reaches the brain is slightly altered. These 'gates' can either reduce or increase the strength of the pain signal.

Some treatments for pain are aimed at closing these 'gates' to reduce the sensation of pain, for example, transcutaneous electrical nerve stimulation (TENS).

Once the pain signal gets through the spinal 'gate', it's further changed by even more complex systems in the brain. The pain message can be affected by a number of factors including:

- how much you concentrate on the pain
- enjoyable activities, which can take your mind off the pain and make it more manageable
- unhappy feelings, anxieties or depression, which can worsen pain
- drugs that have a direct effect on the brain, chemically reducing the impact of pain.

Short-lived pain

Most people have had first-hand experience of pain which is easily understandable, is manageable, and doesn't last very long. Gout is a form of arthritis that causes short-lived attacks of pain, lasting only a few days.

See Arthritis Research UK booklet *Gout.*

Learning to cope with short-lived pain is an important part of growing up.

The experiences of pain we have as children, and the way we are taught to cope with it, may strongly influence how we cope with pain in adult life.

Arthritis, joint and muscle pain

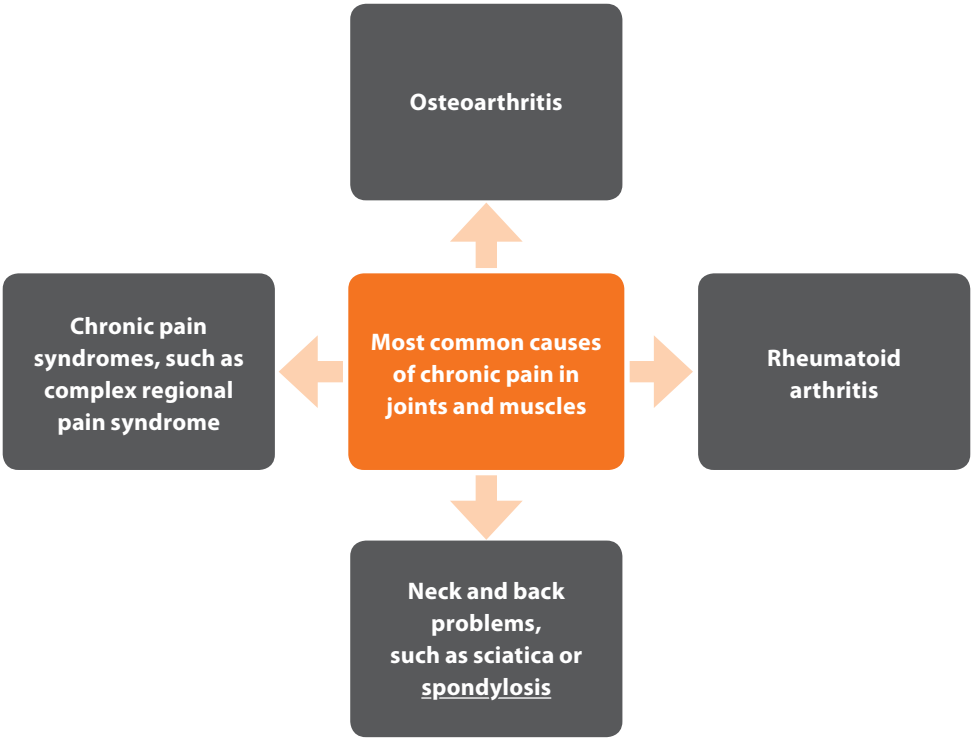
This section describes some of the most common causes of chronic pain in joints or muscles and the ways in which pain from these conditions can be treated (see Figure 2).

Osteoarthritis

In osteoarthritis, the cartilage that covers the surface of the bones in the joints becomes roughened and thin. This is associated with damage to the underlying bone, causing pain, stiffness and deformity. Sometimes there may be swelling and a sudden increase in pain. When osteoarthritis affects the hands, the pain will often settle after a few weeks or months, although some deformity and stiffness may remain. In other joints, such as the hips, knees or spine, the pain may last a long time and, in some cases, it may severely limit normal activities.

See Arthritis Research UK booklets
Osteoarthritis; Osteoarthritis of the knee.

Figure 2 **The most common causes of chronic pain in joints and muscles**



People with rheumatoid arthritis are usually treated with drugs that control the disease and reduce the risk of joint damage.

Possible pain relief approaches for osteoarthritis:

- pain-relieving (analgesic) and anti-inflammatory drugs
- NSAID gels and rubefacients
- physiotherapy, exercise and losing weight
- orthotic treatments such as insoles and splints
- a steroid injection into the joint when there's a lot of swelling or fluid.

In severe osteoarthritis, effective relief from pain may only be achieved by surgery. The small but important risks of surgery have to be weighed against the severity of the problem and the likely long-term benefit of surgery.

See Arthritis Research UK booklets *Keep moving; Physiotherapy and arthritis.* Also see our range of drug leaflets and surgery booklets.

Rheumatoid arthritis

Rheumatoid arthritis is a form of inflammatory arthritis in which the affected joints become warm, swollen and painful. The pain may be persistent and is sometimes difficult to control, but this isn't true for everyone. Many people are greatly helped by drugs, short periods of rest and physiotherapy.

For some, the arthritis goes away after a few months or years. For others it causes longer-term problems. People with rheumatoid arthritis are usually treated with drugs that control the disease and reduce the risk of joint damage. These are sometimes called disease-modifying anti-rheumatic drugs (DMARDs). They're not painkillers or anti-inflammatory drugs, but because they control the disease the pain should be reduced.

For about 1 in 10 people with rheumatoid arthritis the chronic joint pain never disappears completely. This pain is generally caused either by uncontrolled inflammation in and around the joints despite the use of DMARDs, or by the damage and instability which result from the inflammation. Most people with rheumatoid arthritis will need pain-relieving drugs and drugs that reduce inflammation in addition to DMARDs. It's also important to balance rest and exercise sensibly – a physiotherapist can advise on appropriate exercises. Surgery may sometimes be needed for particularly painful or deformed joints.

See Arthritis Research UK booklet *Rheumatoid arthritis.*

Neck and back pain

Most people experience short spells of neck pain or back pain that improve without specific treatment.

If the pain keeps returning, there are preventative approaches that can help deal with the problem. These include:

- exercises to strengthen the muscles
- special care with posture or your working position
- extra care during activities that involve bending, twisting or stretching
- being careful when lifting heavy objects.

Neck pain after a whiplash injury can be difficult to control in some people, but most improve with simple measures after a few weeks or months.

For some people back pain spreading down one or both legs (sciatica) is caused by pressure on nerve roots in the spine.

This pain may be relieved by x-ray guided spinal injections, such as epidurals or nerve root blocks. These are specialist procedures which are usually carried out in a day-case operating theatre.

A small number of people have back or neck pain that fails to improve and becomes chronic. It's often difficult to understand why this has happened. This pain is disabling and the challenge is not to let it dominate your life. A pain management programme – including education, exercise and coping strategies – may help.

Spinal surgery can be highly successful but isn't usually needed and should only be undertaken after careful consideration of the alternatives. Most people with back and neck pain won't benefit from surgery.

See Arthritis Research UK booklets *Back pain; Neck pain.*

Chronic pain syndromes

Chronic headaches, facial pains and chronic upper limb pain syndrome – previously called repetitive strain injury (RSI) – are examples of chronic pain syndromes. It's often difficult to identify exactly what causes the pain, but it's affected by factors such as the way the sufferer walks, stands and uses their muscles.

As there's no cure or simple explanation for many of these chronic pain syndromes, people in chronic pain may see a large number of specialists and sometimes receive different, or even contradictory, explanations and a wide variety of suggested treatments. Because the problem seems to worsen without any cure being available, the person in pain may feel let down by modern medicine.

Because it's so difficult to explain what causes chronic pain, people often find it hard to help family, friends, work colleagues and healthcare professionals to understand how they're feeling. Those people, in turn, may then find it difficult to deal with the problem.

It's important to balance rest and exercise sensibly – a physiotherapist can advise on appropriate exercises.

However, there are pain management clinics, specialising in the care of chronic pain. Your GP should be able to refer you for advice and help.

In many cases chronic pain leads to changes in the way people behave – which may then make the pain worse. For example, a person with chronic pain in the right leg may start to stand or walk leaning heavily to the left side, which may eventually lead to pain in the left leg too. When people have chronic pain that prevents them from doing things that they need or want to do, this may often affect their mood and feelings, leading to frustration, anxiety and depression. Just like changes in the way people walk or stand, these changes in mood can make the pain feel worse too.

In complex regional pain syndrome (reflex sympathetic dystrophy) pain is confined to a particular region of the body (for example one arm or one leg) and often has a burning quality. It may follow a minor injury, an operation or a stroke or there may be no clear underlying cause. It's thought that the communication pathways between the affected limb and the brain become disrupted, so the pain is more intense or, if it follows an injury, persists for longer than expected.

Treatment for complex regional pain syndrome may include standard painkillers or stronger morphine-like painkillers. However, some people will need neuromodulatory drugs (for example gabapentin, pregabalin) which reduce the pain signals from the nerves to the brain, or a sympathetic block – an injection that suppresses the sympathetic nervous system. Rehabilitation is an important aspect of the treatment and may include specialist physiotherapy, occupational therapy and psychology. Most people with complex regional pain syndrome will benefit from touching or moving the affected limb, in spite of pain.

See Arthritis Research UK booklet *Complex regional pain syndrome (CRPS).*

What can I do about my pain?

There are now more approaches available than ever before to help manage pain. Drugs, physical treatments and coping strategies can all play a part. One of the keys to handling pain is to understand what's happening.

Drugs

Before 1900, aspirin and simple derivatives of opium (similar to morphine) were the only pain-relieving drugs available, but now there are many more. Although it's important to consider the balance of benefit and the risk of possible side-effects of drug treatments, in general the risks are far outweighed by the benefits.

There are pain management clinics, specialising in the care of people with chronic pain. Your GP should be able to refer you for advice and help.

Because it's so difficult to explain what causes chronic pain, people often find it hard to help family, friends, work colleagues and healthcare professionals to understand how they're feeling.

Drugs may be available under several different names. Each drug has an approved (or generic) name but manufacturers often give their own brand or trade name to the drug as well. For example, Nurofen and Panadol are brand names for ibuprofen and paracetamol respectively, which are the approved names. The approved name should always be on the pharmacist's label even if a brand name appears on the packaging, but check with your doctor, nurse or pharmacist if you're in any doubt. We'll use the approved names in the sections that follow.

Painkilling (analgesic) drugs

Analgesics are drugs that act specifically against pain and are helpful for most types of pain:

- Paracetamol is an example of a simple analgesic.
- More complex analgesics are related chemically to morphine but are much less likely than morphine to cause problems such as addiction. However, other side-effects such as constipation and drowsiness still occur. Codeine is an example. They're often used more effectively in combination with paracetamol as compound tablets, for example:
  - co-codamol (paracetamol and codeine)
  - co-dydramol (paracetamol and dihydrocodeine).
- Tramadol, oxycodone, slow-release morphine or patches containing fentanyl or buprenorphine are stronger drugs which may be used for severe pain but are used with more caution. All of these drugs can be seen as part of the morphine family, as can codeine and dihydrocodeine. Opioid analgesics can cause constipation and may cause drowsiness, especially if taken with alcohol.

See Arthritis Research UK drug leaflet *Painkillers.*

Non-steroidal anti-inflammatory drugs (NSAIDs and coxibs)

NSAIDs combine pain-relieving effects with an additional action that reduces inflammation. As inflammation is the main cause of pain in many conditions – including most forms of arthritis – these drugs can be doubly effective against chronically painful conditions.

They can be used in combination with the simple or compound analgesics mentioned above, and can be helpful even when there isn't a great deal of inflammation – for example in osteoarthritis:

- Aspirin and ibuprofen are probably the best-known NSAID tablets and are widely available over the counter without a prescription.
- Diclofenac, naproxen and indometacin are other commonly used NSAID tablets. These are available with a doctor's prescription.

Anyone who has had severe indigestion or peptic ulcers in the past should usually avoid using NSAIDs.

- Some NSAIDs (for example ibuprofen, diclofenac) are also available as gels which are applied to the skin around painful joints. These may sometimes produce local skin irritation.
- A newer type of NSAID commonly called coxibs (COX-2-specific NSAIDs), such as celecoxib or etoricoxib, are designed to control pain and inflammation but are less likely to cause indigestion and stomach ulcers sometimes associated with the older NSAIDs.

Like all drugs, NSAIDs can sometimes have side-effects, but your doctor will take precautions to reduce the risk of these – for example, by prescribing the lowest effective dose for the shortest possible period of time.

NSAIDs can cause digestive problems (stomach upsets, indigestion, or damage to the lining of the stomach) so in most cases they'll be prescribed along with a drug called a proton pump inhibitor (PPI), which will help to protect the stomach.

NSAIDs also carry a slightly increased risk of heart attack or stroke. Although the increased risk is small, your doctor will be cautious about prescribing NSAIDs if there are other factors that may increase your overall risk – for example, if you've previously had angina or a heart attack or if you smoke, or have circulation problems, high blood pressure, high cholesterol or diabetes.

See Arthritis Research UK drug leaflet *Non-steroidal anti-inflammatory drugs.*

Corticosteroid drugs

Corticosteroid drugs (steroids) may be given either as tablets or by injection. They're not painkillers, but by reducing inflammation they also reduce the pain.

Prednisolone is the most commonly prescribed steroid tablet for inflammatory arthritis. In certain conditions steroid tablets are prescribed because nothing else works, such as in polymyalgia rheumatica.

See Arthritis Research UK booklet *Polymyalgia rheumatica (PMR).*

Steroids can also be given by injection – either into the joint itself or into soft tissues near the joint. Steroid injections are usually very effective in relieving pain and the benefit can last from a few weeks to several months. Sometimes the pain may flare up for a day or so just after the injection before settling down.

See Arthritis Research UK drug leaflets *Local steroid injections; Steroid tablets.*

Side-effects usually develop only when steroid tablets are used for more than a few months, and are more likely to occur with larger doses. The most common side-effects are increased appetite and weight gain, muscle weakness, and anxiety or sleeplessness. They may also cause thin, slow-to-heal skin or thin, fragile bones (osteoporosis). However, the risk of developing osteoporosis can be reduced by medication.

See Arthritis Research UK drug leaflet *Drugs for osteoporosis.*

Drugs for nerve pain and chronic pain syndromes

Tricyclic antidepressants (most commonly amitriptyline or dosulepin) are prescribed to be taken at night for people who have chronic widespread pain, especially fibromyalgia where disturbed or unrefreshing sleep is thought to contribute to the ongoing pain. These drugs act partly by improving sleep and partly by helping the brain to control sensations coming from the upper body and limbs. At the low doses used for chronic pain they aren't truly anti-depressant. Side-effects include drowsiness in the morning and a dry mouth, although these aren't usually a problem if the dose is increased slowly.

Gabapentin, carbamazepine and pregabalin are members of a group of neuromodulatory drugs (drugs that act on the nervous system) often used to treat epilepsy. However, they can also be useful in controlling some types of pain, particularly where the pain is due to nerve damage.

Nerve blocks and other injection techniques for pain

Increasingly, pain specialists are using injections to block pain by a direct action on a nerve or on the spinal nerve root when other treatments fail. These injections usually combine a local anaesthetic with a corticosteroid. They're not suitable for all types of pain, but they're sometimes helpful for osteoarthritis of the small facet joints between the bones of the spine or for compression of nerves in the lower spine.

Increasingly, pain specialists are using injections to block pain by a direct action on a nerve or on the spinal nerve root.

Learning to rest sensibly, avoiding certain activities, asking for help, and using gadgets and home adaptations are all important ways of adjusting and learning to cope.

The exact site for the injection can usually only be decided after special scans, such as magnetic resonance imaging (MRI) or computerised tomography (CT). The specialist can then place the needle accurately by following an x-ray image, which is displayed on a screen. These treatments are for symptom control and aren't cures.

Other pain relief treatments and therapies

Simple measures that can help to relieve joint or muscle pain include:

- a heated wheat or rice pad or a hot-water bottle
- an ice pack or a cold-water compress
- massage (with or without creams that create a sense of warmth, called rubefacients)
- adequate rest time.

These techniques are often helpful after an injury and for sudden flare-ups of arthritis or back pain. They don't cure the problem, but they are safe and soothing.

Physiotherapists, osteopaths and chiropractors may use a variety of different manual techniques, including massage, manipulation and stretching, to relieve pain and to help return the muscles and joints to normal. They may also use technologies such as ultrasound, laser or interferential treatment.

Exercise programmes, initially supervised by a physiotherapist, may help to control your pain. They help to relax and strengthen the muscles and may also improve general fitness. Pilates or core stability exercises are increasingly recommended for people with back pain. Exercise at a time when you're not feeling too stiff and take some painkillers beforehand if you need to. Take time to relax and rest afterwards.

It's important to go to a qualified practitioner, preferably with the advice and guidance of your doctor. If there's no improvement after a few weeks of treatment, further investigations may be needed. It's better to exercise little and often rather than a lot occasionally. Find a form of exercise that you enjoy so you're more likely to continue with it.

Transcutaneous electrical nerve stimulation (TENS)

This is a technique that uses small pulses of electricity to produce a tingling sensation. It aims to disrupt pain signals by reducing the sensitivity of the nerve endings in the spinal cord. It doesn't help everybody, but some people find it very

effective, especially when the pain is due to nerve damage. Some people become allergic to the jelly used to apply the pads, but otherwise TENS has few side-effects. A physiotherapist can advise you on the correct position of the pads, the frequency and strength of the pulses, and how long the treatment should last.

Acupuncture

Acupuncture is used by doctors and other practitioners for many purposes including pain relief – often with good effect. Very fine needles are inserted into specific points in the body. It's thought to work by diverting or changing the painful sensations that are sent to the brain and by stimulating the body's own pain-relieving hormones (endorphins and encephalins).

Psychological techniques

Psychologists are specialists who often work as part of the team in pain management clinics. They help people to think differently about their pain and change their behaviour as a result. Although some people are suspicious of this approach at first, it has proved to be very successful in helping people to manage their symptoms. Pain is never a purely physical phenomenon, and when the pain is chronic, or its cause is difficult to determine, the psychological and social effects need to be specifically addressed.

Relaxation techniques and sleep patterns

Relaxation techniques are helpful in many conditions. They work by:

- relaxing the tense and painful muscles
- relieving the anxiety that makes pain more difficult to bear.

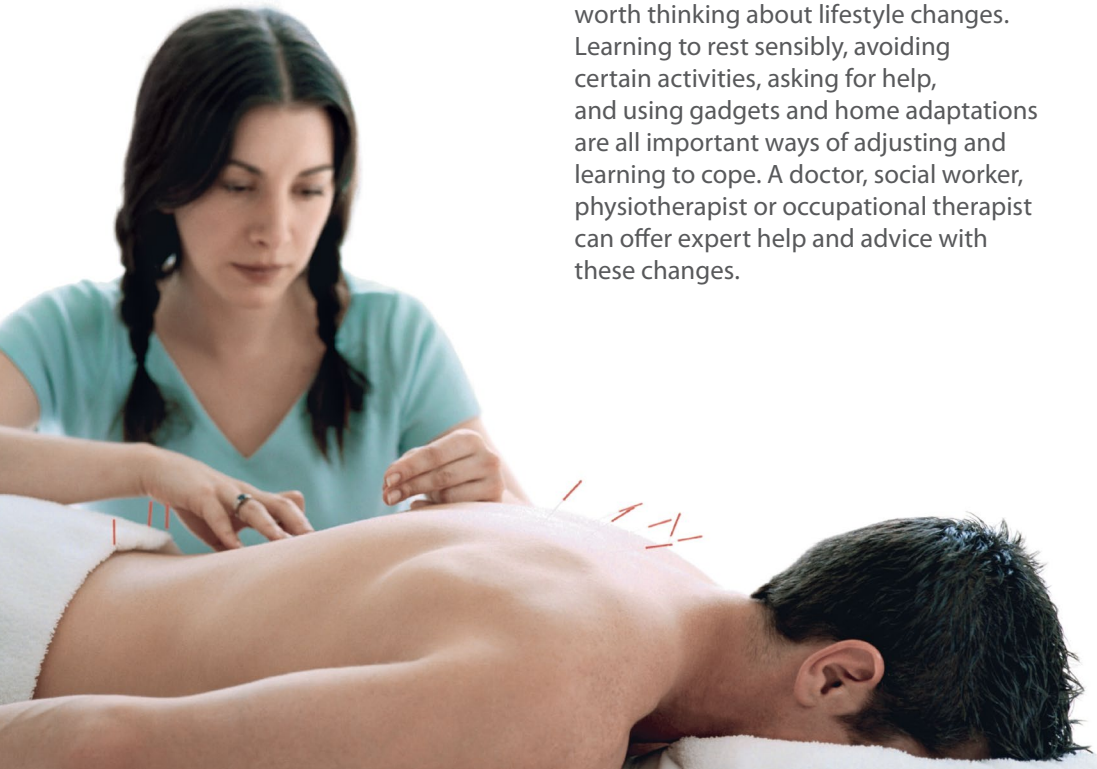
Relaxation tapes, yoga and hypnosis can sometimes be helpful. Special methods like the Alexander technique (which teaches awareness of posture and relaxation to reduce muscle tension) may also help. They're often used by pain management clinics. It's worth asking your doctor about these techniques.

It's recognised that disturbed or unrefreshing sleep increases the symptoms of pain – especially muscle pain. If you wake still feeling tired or wake frequently during the night, a doctor or physiotherapist may be able to advise you about improving this.

See Arthritis Research UK booklets *Fatigue and arthritis; Sleep and arthritis.*

Self-help and daily living

Unfortunately, for some people pain is long-lasting, doesn't respond fully to drugs or physical treatments, and can't be cured by surgery. In this case it's worth thinking about lifestyle changes. Learning to rest sensibly, avoiding certain activities, asking for help, and using gadgets and home adaptations are all important ways of adjusting and learning to cope. A doctor, social worker, physiotherapist or occupational therapist can offer expert help and advice with these changes.



What should I do if my pain is severe?

For a small minority of people pain can be severe and disabling. The pain often means you have to rest more, or can only walk or move awkwardly. This can result in a vicious circle of pain, anxiety and depression, and becoming physically unfit. It can be difficult to pluck up the courage to do exercises despite the pain, to find other things to concentrate on and to refocus your thoughts away from the pain. People affected in this way should be referred to a pain management clinic. Learning new ways to cope with pain can help. It can be helpful in certain situations to focus more on improving your ability to function rather than trying to reduce pain. This can sometimes be achieved by developing strategies to help with fear of movement. With help from family and friends, as well as from specialists, you can still have a fulfilling life.

See Arthritis Research UK guide *Living with long-term pain: a guide to self-management,* which is aimed at people with long-term musculoskeletal pain who don't know where to turn to find the relief they desperately need. It offers a lifeline to those people who feel they have exhausted the usual avenues of NHS treatment. See the back of this booklet for details on how to order or download this guide.

Research and new developments

Alongside the University of Nottingham and local NHS Trusts, Arthritis Research UK are proud to support the world's first national centre for research into understanding the mechanisms of pain in arthritis.

The Arthritis Research UK Pain Centre aims to:

- investigate how people experience pain to understand the biological basis of pain in arthritis
- develop new drugs to treat pain more effectively
- improve the effectiveness of currently available pain-relief drugs
- investigate basic pathways of pain perception to identify new targets for developing treatments.

Experts in rheumatology, neuro-imaging, psychology, neuropharmacology, neurosciences and orthopaedic surgery will all play major roles in realising the ambitions of the centre, funded over five years by £2.5m from Arthritis Research UK and a further £3m from the University of Nottingham.

Glossary

Cartilage – a layer of tough, slippery tissue that covers the ends of the bones in a joint. It acts as a shock absorber and allows smooth movement between bones.

Chiropractor – a specialist who treats mechanical disorders of the musculoskeletal system, often through spine manipulation or adjustment. The General Chiropractic Council regulates the practice of chiropractic in the UK.

Computerised tomography (CT) scan – a type of scan that records images of sections or slices of the body using x-rays. These images are then transformed by a computer into cross-sectional pictures.

Cognitive behavioural therapy (CBT) – a psychological treatment based on the assumption that most of a person's thought patterns and emotional or behavioural reactions are learned and can therefore be changed. The therapy aims to help people resolve difficulties by learning more positive thought processes and reactions.

Disease-modifying anti-rheumatic drugs (DMARDs) – drugs used in rheumatoid arthritis and some other rheumatic diseases to suppress the disease and reduce inflammation. Unlike painkillers and non-steroidal anti-inflammatory drugs (NSAIDs), DMARDs treat the disease itself rather than just reducing the pain and stiffness caused by the disease. Examples of DMARDs are methotrexate, sulfasalazine, infliximab, etanercept, adalimumab, and rituximab.

Epidural – an injection given into the space around the spinal cord in the small of your back to anaesthetise the lower half of the body. The full name is epidural blockade.

Facet joints – the small joints between the vertebrae that allow the spinal column to move. The facet joints are at the back of the spine.

Inflammation – a normal reaction to injury or infection of living tissues. The flow of blood increases, resulting in heat and redness in the affected tissues, and fluid and cells leak into the tissue, causing swelling.

Interferential treatment – a type of electrotherapy that uses two stimulating currents delivered via pads placed on the skin. Electrical interference where the two currents cross can help to relieve pain, increase blood flow and reduce swelling.

Magnetic resonance imaging (MRI) – a type of scan that uses high-frequency radio waves in a strong magnetic field to build up pictures of the inside of the body. It works by detecting water molecules in the body's tissue that give out a characteristic signal in the magnetic field. An MRI scan can show up soft-tissue structures as well as bones.

Nerve root block – an injection of local anaesthetic (often combined with a corticosteroid) around a nerve, which causes a temporary loss of sensation.

Occupational therapist – a trained specialist who uses a range of strategies and specialist equipment to help people to reach their goals and maintain their independence by giving practical advice on equipment, adaptations or by changing the way you do things (such as learning to dress using one handed methods following hand surgery).

Osteopath – a specialist who treats spinal and other joint problems by manipulating the muscles and joints in order to reduce tension and stiffness, and so help the spine to move more freely. The General Osteopathic Council regulates the practice of osteopathy in the UK.

Osteoporosis – a condition where bones become less dense and more fragile, which means they break or fracture more easily.

Physiotherapist – a trained specialist who helps to keep your joints and muscles moving, helps ease pain and keeps you mobile.

Rubefacient – a substance that causes the skin to become red by increasing blood flow. They're sometimes included in ointments used to relieve muscular aches and pains and work by creating a superficial feeling of heat or cold. This distracts the brain from the main cause of pain.

Sciatica – pain felt in the leg due to irritation of the sciatic nerve, a major nerve running from the spine to the leg. The pain is usually felt in the buttock, thigh and calf but can go all the way down to the toes.

Spinal cord – a cord that runs down the centre of the spine and contains the nerves that connect the brain to all the other parts of the body. The nerve fibres are surrounded by several protective layers and pass through the vertebrae (the bones of the back). The spinal cord and the brain together form the central nervous system.

Spondylosis – the term used to describe mechanical or degenerative changes in the small joints in the neck and back. Most of us will have some degeneration in these joints, which can be seen on x-rays, although often these changes don't cause any problems or symptoms.

Sympathetic nervous system – part of the nervous system that controls many of the involuntary actions of the body's glands and organs.

TENS (transcutaneous electrical nerve stimulation) – a small battery-driven machine which can help to relieve pain. Small pads are applied over the painful area and low-voltage electrical stimulation produces a pleasant tingling sensation, which relieves pain by interfering with pain signals to the brain.

Where can I find out more?

If you've found this information useful you might be interested in these other titles from our range:

Conditions

- *Back pain*
- *Complex regional pain syndrome (CRPS)*
- *Fibromyalgia*
- *Gout*
- *Neck pain*
- *Osteoarthritis*
- *Polymyalgia rheumatica (PMR)*
- *Rheumatoid arthritis*

Therapies

- *Complementary and alternative medicine for arthritis*
- *Complementary and alternative medicines for the treatment of rheumatoid arthritis, osteoarthritis and fibromyalgia (63-page special report)*
- *Hydrotherapy and arthritis*
- *Occupational therapy and arthritis*
- *Physiotherapy and arthritis*
- *Practitioner-based complementary and alternative therapies for the treatment of rheumatoid arthritis, osteoarthritis, fibromyalgia and low back pain (6-page special report)*

Self-help and daily living

- *Fatigue and arthritis*
- *Living with long-term pain: a guide to self-management*
- *Looking after your joints when you have arthritis*
- *Sleep and arthritis*

Drug leaflets

- *Drugs and arthritis*
- *Local steroid injections*
- *Non-steroidal anti-inflammatory drugs*
- *Painkillers*
- *Steroid tablets*

You can download all of our booklets and leaflets from our website or order them by contacting:

Arthritis Research UK
Copeman House
St Mary's Court
St Mary's Gate
Chesterfield, Derbyshire S41 7TD
Phone: 0300 790 0400
www.arthritisresearchuk.org

Related organisations

The following organisations may be able to provide additional advice and information:

Arthritis Care
Floor 4, Linen Court
10 East Road, London N1 6AD
Phone: 020 7380 6500
Helpline: 0808 800 4050
Email: info@arthritiscare.org.uk
www.arthritiscare.org.uk

Action on Pain
PO Box 134
Shipdham
Norfolk IP25 7XA
Phone: 01362 820750
Helpline: 0845 603 1593
Email: aopisat@btinternet.com
www.action-on-pain.co.uk

British Acupuncture Council
63 Jeddo Road
London W12 9HQ
Phone: 0208 735 0400
www.acupuncture.org.uk

British Medical Acupuncture Society
BMAS House
3 Winnington Court, Northwich
Cheshire CW8 1AQ
Phone: 01606 786782
Email: admin@medical-acupuncture.org.uk
www.medical-acupuncture.co.uk

Chartered Society of Physiotherapy
14 Bedford Row
London WC1R 4ED
Phone: 020 7306 6666
www.csp.org.uk

General Chiropractic Council
44 Wicklow Street
London WC1X 9HL
Phone: 020 7713 5155
www.gcc-uk.org

General Osteopathic Council
Osteopathy House
176 Tower Bridge Road
London SE1 3LU
Phone: 020 7357 6655
www.osteopathy.org.uk

Royal London Hospital for Integrated Medicine (formerly Royal London Homeopathic Hospital)
60 Great Ormond Street
London WC1N 3HR
Phone: 0845 155 5000 or 020 3456 7890

British Pain Society
3rd Floor, Churchill House
35 Red Lion Square
London WC1R 4SG
Phone: 020 7269 7840
Email: info@britishpainsociety.org
www.britishpainsociety.org

Pain Relief Foundation
Clinical Sciences Centre
University Hospital Aintree
Lower Lane
Liverpool L9 7AL
Phone: 0151 529 5820
Email: secretary@painrelieffoundation.org.uk
www.painrelieffoundation.org.uk

Society of Teachers of the Alexander Technique
1st Floor, Linton House
39–51 Highgate Road
London NW5 1RS
Phone: 0207 482 5135
Email: office@stat.org.uk
www.stat.org.uk

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We're here to help

Arthritis Research UK is the charity leading the fight against arthritis.

We're the UK's fourth largest medical research charity and fund scientific and medical research into all types of arthritis and musculoskeletal conditions.

We're working to take the pain away for sufferers with all forms of arthritis and helping people to remain active. We'll do this by funding high-quality research, providing information and campaigning.

Everything we do is underpinned by research.

We publish over 60 information booklets which help people affected by arthritis to understand more about the condition, its treatment, therapies and how to help themselves.

We also produce a range of separate leaflets on many of the drugs used for arthritis and related conditions. We recommend that you read the relevant leaflet for more detailed information about your medication.

Please also let us know if you'd like to receive our quarterly magazine, *Arthritis Today*, which keeps you up to date with current research and education news, highlighting key projects that we're funding and giving insight into the latest treatment and self-help available.

We often feature case studies and have regular columns for questions and answers, as well as readers' hints and tips for managing arthritis.

Tell us what you think of our booklet

Please send your views to:
feedback@arthritisresearchuk.org
or write to us at:
Arthritis Research UK, Copeman House, St Mary's Court, St Mary's Gate, Chesterfield, Derbyshire S41 7TD

A team of people contributed to this booklet. The original text was written by Dr Mike Shipley, who has expertise in the subject. It was assessed at draft stage by clinical nurse specialist Debbie Bond and consultant rheumatologist Lorraine Croot. An **Arthritis Research UK** editor revised the text to make it easy to read, and a non-medical panel, including interested societies, checked it for understanding. An **Arthritis Research UK** medical advisor, Prof. Wilkinson, is responsible for the content overall.

Arthritis Research UK

Get involved

You can help to take the pain away from millions of people in the UK by:

- volunteering
- supporting our campaigns
- taking part in a fundraising event
- making a donation
- asking your company to support us
- buying products from our online and high-street shops

To get more **actively involved,** please call us on **0300 790 0400**, email us at **enquiries@arthritisresearchuk.org** or go to **www.arthritisresearchuk.org**

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Tel **0300 790 0400**
calls charged at standard rate

www.arthritisresearchuk.org

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