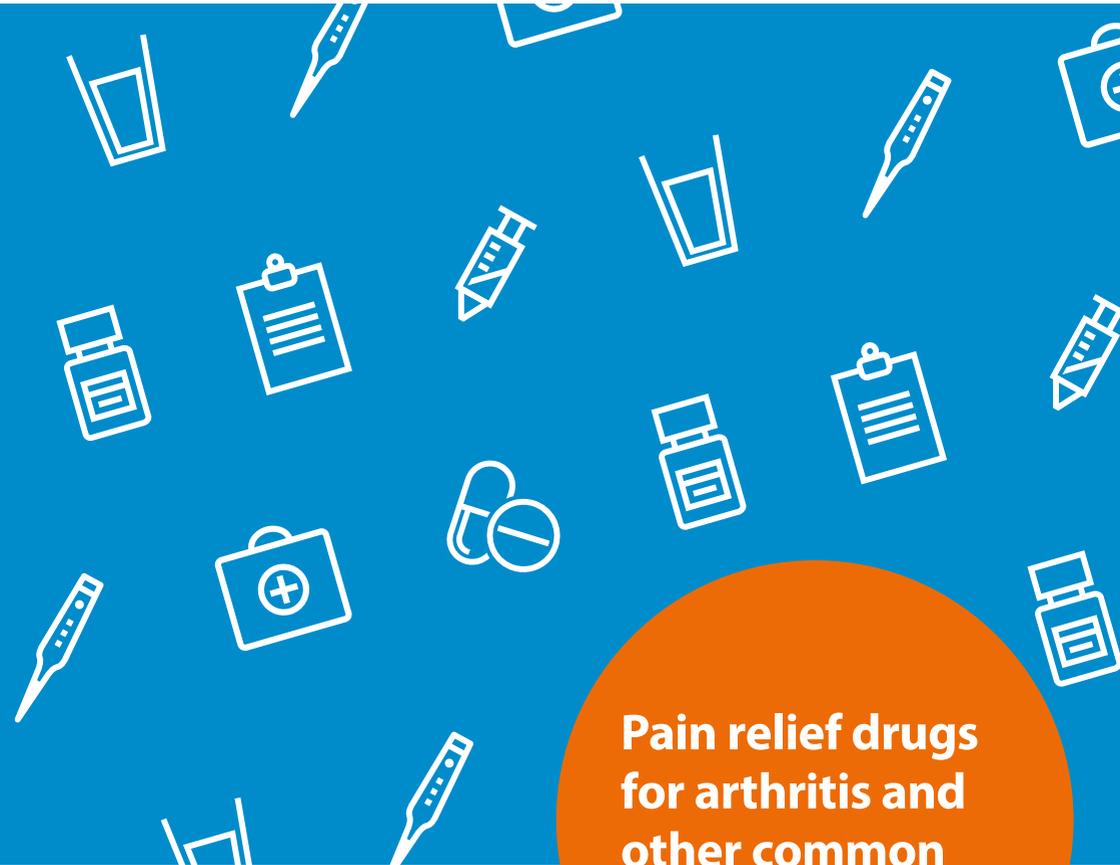




Painkillers and NSAIDs



**Pain relief drugs
for arthritis and
other common
pain conditions**

Painkillers and NSAIDs



If you're experiencing pain in your joints or muscles, whether it's from arthritis or a simple strain or sprain, this booklet will guide you through the medications most often used to ease the pain – some of them are available over the counter so you can start treatment without even seeing your doctor. We'll also look at some of the stronger medications that your doctor may be able to offer on prescription for more severe or persistent pain.

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What types of painkillers are there?

Most pain-relieving medications fall into one of the following groups:

Non-opioid analgesics – e.g. paracetamol (widely available over the counter from pharmacies and supermarkets)

Anti-inflammatory drugs (also known as non-steroidal anti-inflammatory drugs or NSAIDs) – e.g. aspirin, ibuprofen (widely available over the counter); naproxen, diclofenac (only available on prescription)

Compound analgesics – e.g. co-codamol, which combines paracetamol with a dose of an opioid analgesic such as codeine (compounds containing lower doses of codeine are available over the counter from pharmacies)

Opioid analgesics – e.g. codeine, tramadol, morphine (only available on prescription).

Usually, doctors will suggest you try non-opioid analgesics and/or anti-inflammatory drugs first. If these don't help, or if you sometimes need stronger pain medications, then compound analgesics will usually be the next step for moderate pain, followed by opioid analgesics for very severe pain. The reason for this approach is that the stronger medications tend to have more side-effects and can occasionally cause dependency.

The drugs covered in this leaflet will help with the symptoms of pain and/or inflammation but won't cure arthritis or other long-term pain conditions. Depending on the condition you have, you may need other drugs alongside your pain relief medications to control the disease itself (see 'Can I take other medicines alongside painkillers or NSAIDs?' on page 14).

Non-opioid analgesics

Simple non-opioid analgesics are the most common type of analgesic, and the most common of these is paracetamol.

Paracetamol

Paracetamol is available over the counter and it's often the first treatment people try for mild to moderate pain, for example following a minor injury, or for headaches and muscular pains.



Painkillers are usually most effective if you take them before your pain becomes severe.

Table 1 Common examples of analgesics

	PAIN LEVEL		
	Mild	Moderate	Severe
	TYPE		
	Simple non-opioid analgesics e.g. paracetamol, aspirin, ibuprofen	Compound analgesics e.g. co-codamol, co-codaprin, co-dydramol	Opioid analgesics e.g. codeine, tramadol, morphine
What are they?	The most common form of analgesic, also including non-steroidal anti-inflammatory drugs (NSAIDs)	A combination of drugs in one tablet, usually including paracetamol, aspirin, codeine or dihydrocodeine	The strongest types of painkiller
What are they used for?	Mild to moderate pain, for example headaches, injuries and osteoarthritis, or as an addition to stronger painkillers	Mild to moderate pain, for example injuries and osteoarthritis, or as an addition to NSAIDs	Moderate to severe pain caused by osteoarthritis, or as an addition to NSAIDs for severe pain
Where do I get them?	Over the counter at supermarkets and chemists, although some NSAIDs are only available on prescription	Milder forms are available over the counter, but stronger types are only available on prescription	Most are only available on prescription
What are the common side-effects?	Paracetamol has few side-effects with short-term use. Caution may be needed with long-term use because of the possibility of side-effects on the cardiovascular system and kidneys NSAIDs can have a number of side-effects, particularly on the stomach, cardiovascular system and kidneys	Compounds made from codeine and dihydrocodeine can cause constipation, nausea and loss of concentration	Nausea and vomiting, constipation, drowsiness and dizziness
What else should I know?	Shouldn't be used at high doses for long-term pain Paracetamol and some NSAIDs are available as suppositories	Can be used instead of NSAIDs if these can't be taken for any reason	Can cause more side-effects compared with non-opioid types

Paracetamol doesn't have an anti-inflammatory effect, which means it's usually less helpful for inflammatory types of arthritis, such as rheumatoid arthritis. For inflammatory types of arthritis paracetamol may be taken in combination with a non-steroidal anti-inflammatory drug (NSAID).

Paracetamol is available in 500 mg tablets or in liquid form for children. It's usually taken in doses of two 500 mg tablets up to four times a day.

Risks and side-effects of paracetamol

Side-effects are rare, though a few people may develop a rash.

At doses higher than 4,000 mg (eight tablets) per day, paracetamol can seriously damage your liver. The number you can buy at any one time is limited because of this risk. Be aware that many other products, for example cold and flu medications, also contain paracetamol.

There's been some concern that paracetamol may be linked to adverse effects on the cardiovascular system and kidneys, so it's best used with caution if you need long-term pain relief. Your doctor may suggest stopping it from time to time to see if it's still necessary and helpful.

Paracetamol must be used in lower doses than usual if you have kidney problems, and should be used with caution if you have liver problems or drink a lot of alcohol – speak to your doctor if in doubt.

Non-steroidal anti-inflammatory drugs (NSAIDs)

NSAIDs reduce inflammation as well as relieving pain. They're widely used for inflammatory types of arthritis such as rheumatoid arthritis. However, a short course of NSAIDs may also be helpful for osteoarthritis, even though there's usually relatively little inflammation in osteoarthritis.

There are about 20 different NSAIDs available. Some, such as aspirin and ibuprofen, are widely available over the counter and are described in the sections that follow. Others are only available on prescription.

NSAIDs start working within a few hours. Their effects will usually last for a few hours but some types are available in a modified-release formula which means they are effective over a longer period. They can be used in combination with other simple or compound analgesics if necessary.

Risks and side-effects of NSAIDs

Standard NSAIDs such as ibuprofen and naproxen work by blocking enzymes called COX 1 and COX 2, which are important in causing inflammation. Newer NSAIDs (often referred to as coxibs) only block COX 2 enzymes and were designed to reduce side-effects, particularly on the digestive system.

It's usually fine to use a standard analgesic with an anti-inflammatory drug if you need additional pain relief – but check with your doctor or pharmacist first if you're also taking medications for other conditions.

Many different NSAIDs are available. If one type isn't right for you it may be worth asking your doctor for a different one.

If you're at risk of ulceration or bleeding of the digestive system your doctor may recommend:

- **either** a coxib – such as celecoxib or etoricoxib
- **or** a standard NSAID (e.g. ibuprofen, naproxen) along with another drug called a proton-pump inhibitor (PPI) to help protect the stomach (omeprazole and lansoprazole are commonly used PPIs)
- **or**, if the risks are thought to be high, a coxib along with a PPI.

There's evidence that all NSAIDs are linked to a small increase in the risk of having a heart attack or stroke, so they may not be suitable for you if you smoke or if you have or have ever had:

- heart disease, a heart attack or stroke
- peripheral vascular disease (circulation problems in the limbs, usually the legs)
- high blood pressure or cholesterol levels
- diabetes.

You should also be aware of these potential risks with over-the-counter NSAIDs.

If your kidneys aren't working as well as they should, your doctor may ask for a test and may reduce the dose of NSAID you're given or even decide that they're best avoided.

Aspirin

Aspirin is widely used as a painkiller for mild to moderate pain. It's available over the counter in 300 mg tablets and is usually taken in doses of 300–600 mg four times a day after food.

Aspirin is sometimes used in lower doses (75 mg daily) to reduce the risk of strokes and heart attacks. This dose doesn't have a pain-relieving effect.

Risks and side-effects of aspirin

Aspirin can cause stomach-related side-effects at higher doses. Soluble forms reduce this risk to some extent, as do enteric-coated tablets (which have a coating to make sure the drug isn't

absorbed into the body until it reaches the small intestine). But you shouldn't take it if you have indigestion, heartburn or a history of stomach ulcers. It can cause serious bleeding in the digestive system, particularly if you drink alcohol, take the blood-thinning drug warfarin or are over 60. For this reason many doctors will now advise you not to take aspirin for pain relief, but to take a different NSAID or a coxib instead. You should speak to your doctor if you're thinking of taking fish oil supplements because these can interact with aspirin. However, eating oily fish is fine.

In some people, aspirin can make asthma worse or cause an allergic reaction that results in rashes and hives. If you experience any of these side-effects, you should stop taking aspirin immediately. Children and young people under the age of 16 shouldn't take aspirin.

If you're on long-term, low-dose aspirin you must be careful about taking other NSAIDs because this could increase the risk of stomach bleeding. Ask your doctor's advice if you're unsure.

Ibuprofen

Ibuprofen is a widely used painkiller and anti-inflammatory. It's available over the counter in doses of 200–400 mg, which can be taken up to three times a day after food.

Stronger and slow-release NSAIDs or higher doses of ibuprofen are available on prescription and can be used for rheumatoid arthritis and other types of inflammatory arthritis. You shouldn't

take more than one type of NSAID tablet at a time. NSAIDs can have serious side-effects and shouldn't be used long-term without an occasional break to see if they're still necessary and working. Speak to your doctor if you need longer-term pain relief.

NSAID gels and creams

A number of NSAIDs are also available as gels or creams, which you apply directly to the affected area if the pain is localised. Some of these (e.g. ibuprofen, diclofenac) are available over the counter while others (e.g. ketoprofen) are only available on prescription.

NSAID gels may be a good option if NSAID tablets tend to upset your stomach. However, some of the drug is still absorbed into the bloodstream so be careful not to use too much gel, particularly if you're also taking NSAID or coxib tablets, as this may increase the chance of side-effects.

Compound analgesics

Compound analgesics are made from a combination of two different drugs – usually a standard painkiller such as paracetamol, aspirin or ibuprofen plus a low dose of an opioid analgesic such as codeine or dihydrocodeine. Some common compounds are listed in Table 2.

Compound analgesics containing low doses of codeine are available over the counter from pharmacists, but stronger ones are only available on prescription.

Table 2 Common examples of compound analgesics

	TYPE		
	Co-codamol	Co-codaprin	Co-dydramol
What is it?	Codeine (8 mg) and paracetamol (500 mg)	Codeine (8 mg) and aspirin (400 mg)	Dihydrocodeine (10 mg) and paracetamol (500 mg)
What dose can I take?	Up to two tablets four times a day	Up to two tablets four times a day with food	Up to two tablets four times a day
Where do I get them?	Over the counter or on prescription	On prescription	On prescription
What are the common side-effects?	Constipation, nausea, drowsiness and dizziness. Caution needed with long-term use because of possible side-effects of paracetamol on the cardiovascular system and kidneys	Constipation, nausea, drowsiness, dizziness, heartburn and indigestion	Constipation, nausea, drowsiness and dizziness. Caution needed with long-term use because of possible side-effects of paracetamol on cardiovascular system and kidneys
What else should I know?	For more severe pain, combinations of 15 mg/500 mg and 30 mg/500 mg are available on prescription		For more severe pain, combinations of 20 mg/500 mg and 30 mg/500 mg are available

Risks and side-effects of compound analgesics

Compound analgesics that contain codeine should generally be used only for short-term pain relief – normally you'll be advised not to take them for more than a few days at a time. This is because they are potentially addictive and hard to stop.

Ask your doctor's advice before using compound analgesics if you're pregnant or breastfeeding. Older people may be advised to reduce the maximum dose.

Opioid analgesics

Opioid analgesics can be more effective for pain relief than simple non-opioid analgesics, so they're used for moderate to severe pain, usually when other analgesics haven't worked. Pain is considered to be severe if it's disabling, meaning it interferes with your daily life and/or you have to take more frequent rests or can only walk or move awkwardly.

Opioid analgesics come in a tablet or patch forms (see Table 3). Your doctor will advise on which type is best for you depending on the severity of your pain, your age and any other medication that you're taking.

Risks and side-effects of opioid analgesics

Opioid analgesics can cause more side-effects than simple analgesics and can lead to dependency and addiction, so they're only available on prescription and you'll be monitored more closely by your

Opioid analgesics are normally only used when other painkillers and NSAIDs don't give adequate pain relief.

doctor. In many cases they're used only for short periods of time when additional pain relief is needed – this is to reduce the risk of dependency and other side-effects.

The most common side-effects with opioid painkillers are:

- nausea and vomiting – some people are more prone to this than others but it often settles with time
- constipation
- drowsiness and dizziness, which is increased when combined with alcohol – be careful when driving and using electrical equipment
- reduced concentration or confusion
- reduced ability to breathe (respiratory depression) – make sure the doctor prescribing the drug knows if you have long-term breathing problems like chronic obstructive pulmonary disease (COPD) or asthma.

All side-effects are more common in older people, so the dose may be reduced. If you experience any side-effects, talk to your doctor.

Table 3 Common examples of opioid analgesics

	TYPE				TYPE			
	Codeine and dihydrocodeine	Tramadol	Buprenorphine		Fentanyl	Morphine	Oxycodone	Methadone
What are they?	The most widely used weak opioid analgesics	Stronger than codeine and dihydrocodeine and may work in a slightly different way	A strong opioid analgesic for severe pain but can also be given at a low starting dose when used as a low-dose patch		A strong opioid analgesic used for severe, long-term pain	A strong opioid analgesic used after surgery and for severe, long-term pain	A strong opioid occasionally used for severe pain and cancer pain	A long-acting and strong opioid
What dose can I take?	30 – 60 mg up to four times a day	50 – 100 mg up to four times a day	Available in slow-release patches, which have different strengths and can last a week		Prescribed as a patch which is applied to the skin every 3 days	Available in slow-release tablets (MST), which are usually taken twice a day	Available in a variety of strengths as tablets or as slow-release tablets	Dose varies according to the severity of the pain
What are the side-effects?	Constipation, nausea, drowsiness and dizziness, so are avoided for long-term use wherever possible	Fewer side-effects than other opioids, but makes some people feel very fuzzy-headed or confused	Constipation, nausea, drowsiness and dizziness Patches may cause an allergic reaction where they're applied to the skin		Can cause constipation, nausea, drowsiness and dizziness Patches may cause an allergic reaction where they're applied to the skin	Often causes nausea and vomiting as well as constipation, drowsiness and dizziness	Often causes nausea and vomiting, constipation, drowsiness and dizziness	Often causes nausea and vomiting, constipation, drowsiness and dizziness
What else should I know?	Available at various strengths and in slow-release formulas for long-term pain	Available in slow-release formula of 100 – 200 mg for severe pain There are also preparations combined with paracetamol	Also comes in a tablet which is placed under the tongue for an immediate painkilling effect but this is avoided for long-term use		Also available in lozenge form for immediate pain relief but this is avoided for long-term use	Also available as a liquid and a suppository, or an injection for very severe pain		Less sedating than morphine Usually taken twice a day to reduce side-effects when used long term

Note: all of these drugs can cause dependency or addiction, leading to difficulty in stopping them, and they should therefore be used with caution. Your GP will advise you.

Can I take other medicines alongside painkillers or NSAIDs?

Many people with arthritis and other long-term pain conditions will require a combination of NSAIDs and other painkillers, and depending on the condition you have, you may need other drug treatments as well. For example:

- For inflammatory types of arthritis (e.g. rheumatoid arthritis) you might also need disease-modifying anti-rheumatic drugs (DMARDs) such as methotrexate. As the name suggests, these alter the way the condition develops rather than just relieving the symptoms. DMARDs won't have an immediate effect on your pain, but once they do start to take effect you may be able to reduce your pain relief medications.
- For gout, you may need NSAIDs to deal with an acute attack but you may also need another drug such as allopurinol or febuxostat in the longer term to reduce the risk of further gout attacks.
- If you have a long-term pain condition such as fibromyalgia or pain resulting from nerve damage then the pain-relieving medications described in this leaflet may be less helpful, and your doctor may suggest a low dose of an antidepressant such as amitriptyline (at low doses, this has pain-relieving rather than antidepressant effects) or an anticonvulsant such as gabapentin. Although these are not classified as painkillers they can be helpful for some types of pain.

If you're taking medications for other conditions you should speak to your doctor or a pharmacist about possible drug interactions.

i Arthritis Research UK produces separate information leaflets on many DMARDs and on allopurinol, febuxostat and amitriptyline.

Can I have vaccinations if I'm taking painkillers or NSAIDs?

There's no reason to avoid vaccinations if you're taking NSAIDs or painkillers.

Can I drink alcohol if I'm taking painkillers or NSAIDs?

It's usually fine to drink alcohol if you're taking painkillers or NSAIDs. However, alcohol can sometimes increase the risk of side-effects from your medicines – for example:

- NSAIDs and alcohol can both upset the stomach.
- There may be an increased risk of bleeding in the digestive system if you drink alcohol and take aspirin.
- Side-effects of opioids, especially drowsiness and dizziness, may be worse if you also drink alcohol.

If you're affected by any of these problems, then it's a good idea to limit your alcohol intake.

Will painkillers or NSAIDs affect fertility, pregnancy or breastfeeding?

If you're planning a family or you become pregnant you should discuss your medications with your doctor as soon as possible.

There's mixed evidence concerning a small increased risk of miscarriage if NSAIDs are taken around the time of conception. You may therefore wish to avoid NSAIDs in the first three months of pregnancy especially if you've previously had difficulty becoming pregnant.

NSAIDs other than low-dose aspirin should be stopped at 32 weeks to prevent premature closure of the baby's ductus arteriosus (a blood vessel which normally closes soon after the birth). Low-dose aspirin (up to 75 mg) may be continued throughout pregnancy and is recommended if the mother has high blood pressure.

There is little evidence relating specifically to the use of COX-2 NSAIDs (coxibs) during pregnancy so it's recommended that these are avoided.

Paracetamol and opioid analgesics may be used during pregnancy. Regular or prolonged use, however, is probably best avoided during pregnancy because of a possible increased risk for the baby of wheezing or childhood asthma, or of an undescended testicle in boys.

Paracetamol is considered a good choice and low-dose aspirin is considered safe to use if you're breastfeeding. NSAIDs do pass into the breastmilk but there's no evidence that this is harmful to the baby. Caution is advised with drugs containing codeine as its metabolism is unpredictable and there's a possibility that the baby's central nervous system (which controls breathing and heart rate) could be affected.

It's not thought that NSAIDs or painkillers are likely to be harmful if taken by men wishing to father a child.

Arthritis Research UK works to improve the quality of life for people with arthritis so that they can say they are **in control, independent and recognised.**

We're dedicated to funding research into the cause, treatment and cure of arthritis so that people can live pain-free lives.

For more expert information visit our website or if you would like to tell us what you think about our booklets email bookletfeedback@arthritisresearchuk.org or write to the address below.

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Please note: we have made every effort to ensure that this content is correct at time of publication, but remember that information about drugs may change. This information sheet is for general education only and does not list all the uses and side-effects associated with these drugs.

