

Sleep and arthritis

This booklet provides information
and answers to your questions
about sleep and arthritis.



How can problems sleeping affect me?



A sleep problem can make the fatigue linked with arthritis worse, and it can affect mood, memory and concentration. If it carries on for a long time, it may also cause muscle tension and pain. This booklet will tell you about some common sleep problems and what can be done to help.

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

Sleep and arthritis

Painful conditions like arthritis can affect the quality of your sleep, and poor-quality sleep can in turn affect your general health.

What common sleep problems are there?

Common problems include:

- difficulty getting to sleep
- waking up often during the night
- waking too early in the morning
- not feeling refreshed when you wake up (non-restorative sleep).

People with a severely disturbed sleep pattern may suffer from a number of these problems.

How can I improve my sleep?

Try to think about sleep hygiene, which just means things you can do to improve your sleep. Some of the following may help:

- use a sleep diary to keep track of your sleeping habits
- avoid sleeping during the day
- avoid tea, coffee and any other products that contain caffeine after midday

- don't eat or drink large amounts just before bedtime
- avoid drinking alcohol if your sleep is disturbed
- don't smoke before bedtime or during the night
- exercise regularly (but not within three hours of going to bed)
- keep the bedroom dark, quiet and at a comfortable temperature
- check that your mattress and pillows are comfortable
- set up a relaxing routine – try to go to bed and wake up at the same time each day
- if you can't sleep after about 20 minutes, get up and return to bed when sleepy
- take a warm bath before going to bed.

What treatments are there?

Medications that might help include:

- painkillers and non-steroidal anti-inflammatory drugs (NSAIDs), for example paracetamol, codeine and ibuprofen, if pain is stopping you sleep, but avoid types that include caffeine as these may disrupt sleep

There are many different things you can try to help improve your sleep, including not eating just before bedtime.

- sedating antidepressant drugs, for example amitriptyline, which make you sleepy
- sedatives, for example temazepam, zolpidem and zopiclone (doctors advise against using sedatives in the long term because they may have side-effects)
- quinine sulphate, which can help reduce painful muscle cramps during the night, but it won't work on other types of pain and will only be used for a short trial if other treatments haven't worked.

Relaxation techniques and cognitive behavioural therapy (CBT) may also be helpful.



How can disturbed sleep affect my health?

Many people struggle to sleep at some time in their lives, for example when looking after young children. This doesn't usually cause any health problems, although you may feel tired. However, some people whose sleep is poor or disturbed night after night may begin to notice their health getting worse.

Several biological functions are influenced by sleep. Our body clock is controlled by our sleep pattern and many different hormones in the body are affected by sleep. For example, steroid hormones produced by the adrenal glands are at their highest level when we wake up in the morning and lowest before going to sleep at night. So taking steroid tablets later in the day can affect the body clock and may disrupt sleep.

Most adults need about seven to eight hours' sleep per night.

If your body clock is altered by a change in sleep pattern (for example, if you have jet lag), you may feel unwell. Fatigue, stomach problems and headaches are common, and you may find it difficult to think clearly, concentrate or carry out otherwise normal activities such as driving.

What is a normal sleep pattern?

Sleep an essential part of life. Most adults need about seven to eight hours per night, although this can vary from person to person, with some needing much less. Older people tend to have lighter sleep and children need to sleep more than adults.

There are various stages of sleep, and the pattern of brainwaves differs in each stage (see Figure 1). They're commonly referred to as non-REM (rapid eye movement) and REM sleep (dreaming sleep).

Non-REM sleep happens in four stages:

- Stages 1 and 2 refer to light sleep.
- Stages 3 and 4 refer to deeper sleep with slow brainwaves.

These phases are repeated several times during the night, with each complete cycle lasting about 90 minutes.

The proportion of deep sleep and dreaming sleep changes as we get older but the length of each sleep cycle stays the same. For example, babies dream for almost half the time they're asleep compared to an average of only 10% in adults.

Sleep problems

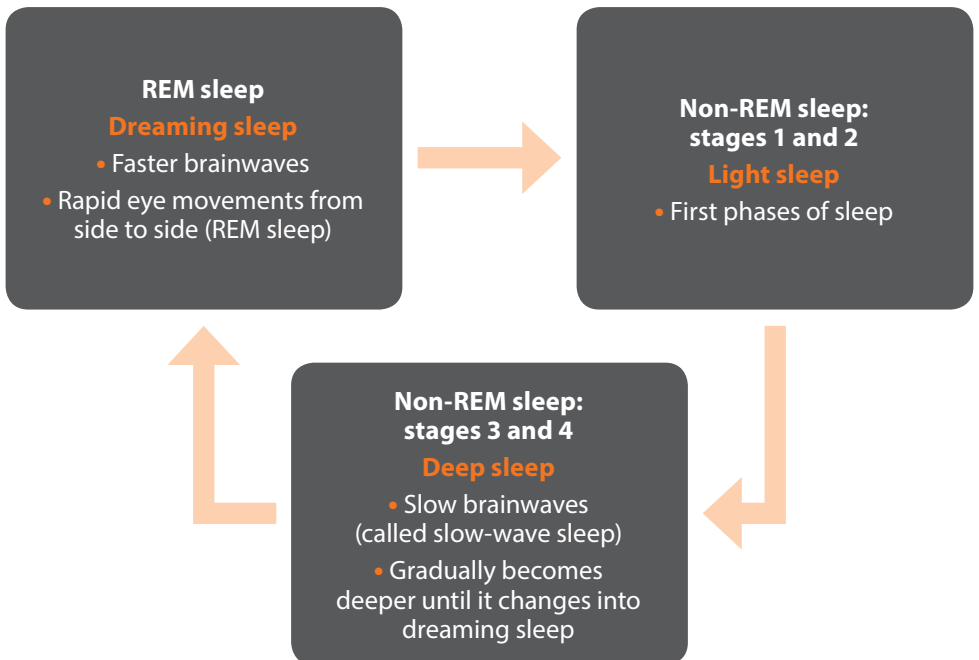
Sleep problems can take several different forms:

- Some people have trouble getting to sleep but then sleep through the night.
- Others wake often during the night or wake too early in the morning.
- Some people don't recall having disturbed sleep but don't feel refreshed when they wake (non-restorative sleep).
- People with a severely disturbed sleep pattern may suffer from all

these problems. If this carries on for a long period, it can cause increased muscle tension and can be linked with muscle pain.

Although most adults need about seven to eight hours of sleep each night, many people manage quite well with less. It's normal to wake up once or twice each night, and it's only a problem if you can't get back to sleep again or if you're not happy with the amount and quality of sleep you're getting.

Figure 1 The stages of sleep





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Sleep and arthritis

Sleep has a major effect on our mood. People who are depressed might have disturbed sleep because of their psychological illness. However, a poor sleep pattern over a period of time will often lead to anxiety or depression, or both, so it's sometimes difficult to know whether sleep disturbance results from depression or is the cause of it.

Sleep and pain

Sleep disturbance may lower the point at which you feel pain (your 'pain threshold'). This could lead to:

- increased pain from an already painful condition
- pain from a condition that hadn't been painful before
- pain that was felt only in a particular part of the body (localised pain) before becoming more widespread.

People with **fibromyalgia** have generalised pain and stiffness, along with sleep disturbance and fatigue. Although it's likely that the fatigue is caused by a poor sleep pattern, it's also possible that pain and stiffness may be caused by sleep disturbance. This idea is supported by the results of a study that prevented volunteers from going into deep sleep. Within a few days, all the volunteers developed widespread stiffness and muscle pains. People with fibromyalgia often recall having disturbed sleep before the pain and stiffness began. The possibility that disturbed sleep could lead to the development of fibromyalgia

makes it important to try to improve the quality of your sleep.

i See Arthritis Research UK booklet *Fibromyalgia*.

Sleep and arthritis

All forms of arthritis can affect the way people sleep, especially if they cause pain that makes it uncomfortable to lie in bed.

- Back pain or neck pain can cause problems getting to sleep or waking during the night. If your pillow or mattress is too soft or too firm, or if they don't give enough support, they can make these problems worse.
- Pain from **osteoarthritis** happens mostly when the joints are being moved, but it can sometimes cause problems at night as well – this quite often happens with osteoarthritis of the hip. Surgeons often take this into account when considering whether a joint replacement operation is needed.
- People with **rheumatoid arthritis** are more likely to suffer disturbed sleep than people of a similar age who don't have arthritis. Sleep disturbance is usually worse when the pain is worse and is also linked to increased anxiety and depression, as well as morning stiffness and fatigue.

i See Arthritis Research UK booklets *Back pain; Neck pain; Osteoarthritis; Rheumatoid arthritis*.

Restless legs

Many people find their sleep is disturbed by restless legs – unusual and sometimes unpleasant sensations in the legs which create a strong urge to move the legs to stop the feeling. Restless legs syndrome (RLS) can occur at any time but is often worse at night. A related condition called periodic limb movement disorder (PLMD) only occurs at night and causes the arms or legs to jerk or twitch.

RLS and PLMD can affect anyone but are quite often linked with long-term conditions. They can also occur as a side-effect of some medications or as a result of not having enough iron or vitamins in your body. You should see your doctor if restless legs are adding to your sleep problems. Treatment may involve:

- changing your medications
- taking iron or vitamin supplements
- avoiding stimulants such as caffeine and alcohol
- stretching and massaging your leg muscles.

If your symptoms are severe, your doctor may suggest treatment with a group of drugs called dopamine agonists. These increase the levels of a chemical called dopamine in the brain, which is needed to produce smooth muscle activity and movement and so helps to prevent the involuntary movements seen in RSD and PLMD. Examples of dopamine agonists include ropinirole and pramipexole.

Snoring

Snoring is common and can be a symptom or a cause of sleep disturbance. Most people who snore remain perfectly well and don't feel sleepy during the day, but they may be more sensitive to the effects of alcohol or sedatives.

Severe snoring may be a sign of obstructive sleep apnoea syndrome, a condition caused by brief blockages of the upper airway during sleep. It's often linked with obesity and a larger neck circumference, and the risk is also increased in cigarette smokers, people with diabetes and in those with a long-term blocked nose (chronic nasal congestion). It can cause chronic fatigue and can be diagnosed by measuring the level of oxygen in the blood during sleep.

Treatment for obstructive sleep apnoea syndrome includes weight control and avoiding alcohol, but in addition there are a number of specific therapies that may be effective, including positive airway pressure (which involves wearing a mask during the night), surgery to

Snoring is more common as we get older. It's been estimated that 45% of men and 30% of women over 65 snore.

clear a blockage in the upper airway and drug therapy.

How can sleep be improved?

A diary of your sleep pattern can be very helpful in finding out the factors that help or disturb your sleep. The diary can include:

- the time you went to bed and when you woke up
- whether you got to sleep easily or not
- any causes of disturbance, such as your mood, pain or fatigue
- any caffeinated drinks
- your daytime activities.

If your sleep is disturbed by pain, drug treatments may help. However, sleep disturbance is often caused by a combination of factors, which may include pain but also fatigue, stress or depression. This can be more difficult to deal with and healthcare professionals will usually suggest thinking about sleep hygiene – things that you can do to improve your sleep pattern.

Sleep hygiene

Sleep hygiene simply means things that you can do to improve your sleep.

- Avoid sleeping during the day because this can make it more difficult to get to sleep at night.
- Avoid caffeine – for example in tea, coffee and chocolate – after midday.
- Eat sensibly to prevent feeling hungry during the night but avoid eating and drinking large amounts just before bedtime.
- Avoid drinking alcohol if you experience serious sleep disturbance as it may affect your sleep.
- Don't smoke before bedtime or during the night.
- Take regular exercise during the day, but not within three hours of going to bed.



A warm bath before bed can relax you and help ease stiffness.

- Try not to use your bedroom for stimulating activities, for example watching television, working or eating. It's best to make the bedroom a peaceful and pleasant environment, dark and quiet and at a comfortable temperature.
- Try to set up a relaxing routine and go to bed at the same time every day, ideally when you're sleepy. If you're unable to sleep after about 20 minutes, get up and do something that's not overstimulating (for example listening to some soothing music). Only go back to bed when you're sleepy. Try also to get up at about the same time every day.
- Take a warm bath before going to bed as this may help ease stiff or painful joints.

If your mattress is old or uncomfortable, you should probably consider replacing it. Changing the number or position of pillows or choosing a soft or moulded pillow may be helpful if you have neck or upper back pain. Some people find it helpful to sleep in a narrow soft foam collar.

Drug treatments

If sleep problems carry on, you should speak to your GP, rheumatologist or rheumatology nurse specialist, who'll be able to offer more advice and prescribe suitable medications if they're needed.

There are four main groups of drugs that can be helpful (see Figure 2). They're most likely to help when there's a single cause of sleep disturbance, such as arthritis pain. Many patients will find it useful to take a combination of drugs from more than one of these groups. Your GP or hospital specialist will be able to advise on which drugs are most likely to help you.

Painkillers (analgesics) – Taking paracetamol (with or without codeine) just before going to sleep can ease pain symptoms for a time to allow you to get to sleep, but it's unlikely to last all night. Non-drowsy painkillers that include caffeine are unlikely to help you sleep.

Non-steroidal anti-inflammatory drugs (NSAIDs) – Slow-release NSAIDs such as ibuprofen or naproxen reduce pain and stiffness throughout the night. Although these drugs have potential side-effects, they can be very useful if prescribed appropriately.

i See Arthritis Research UK booklet
Everyday living and arthritis.

Figure 2 The four main groups of drugs prescribed for sleep problems



Sedating antidepressant drugs – Some antidepressant drugs, such as amitriptyline, dosulepin and trazodone, have sedative effects, which means they make you feel sleepy. They may also reduce chronic pain. These drugs aren't given as sleeping tablets but may improve sleep as an added benefit. It's often advisable to take them a few hours before going to bed so that the effect has worn off by the morning.

Sedatives (hypnotics) – Temazepam, zolpidem and zopiclone are examples of drugs that are given specifically to help you sleep. They're sometimes called hypnotics. They help you to go to sleep but may not stop you waking up throughout the night. Doctors often advise against using sedatives in the long term because of the risk of dependence, which means you become addicted to them. There's also a risk of side-effects, but they can be very helpful for short-term use. In some cases long-term use of these drugs may be better than long-term sleep loss.

Many people experience painful muscle cramps during the night. Your doctor will look to see if any medication you're taking could be causing the cramps (for example diuretics or statins) and will suggest stretching before you go to bed. If this doesn't help, they may prescribe a short course of a drug called quinine sulphate, which can be useful for reducing these pains, though it doesn't work on other types of pain.

In addition there are other drugs that are usually prescribed for people who have chronic pain, and these drugs may sometimes have useful effects on sleep. Examples include pregabalin and gabapentin.

Other treatments

Some rheumatology clinics offer evidence-based self-management groups which deal with fatigue and sleep issues. Ask if your rheumatology team offer this. Visiting a therapist or psychologist may

also be helpful. They may be able to offer relaxation tips or 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.

A number of studies have investigated CBT as a treatment for sleep problems in people with chronic pain. CBT can be given either in group sessions or to individuals and aims to help people change any thoughts, feelings or behaviours that may be having a negative impact on sleep.

CBT uses a number of different techniques:

- **Education** teaches about sleep and the factors which help or disturb it (including sleep hygiene).
- **Sleep restriction** aims to improve sleep efficiency (the proportion of time in bed that's spent sleeping). This is based on the principle that lying in bed awake for long periods makes sleep problems worse in the long term. Bedtimes and getting-up times are changed to better reflect how much sleep you get.
- **Stimulus control** aims to help people link the bed only with sleep and sex. Common methods of stimulus control include removing the TV from your bedroom and not working or reading in bed.

Removing stimulus such as a TV from your bedroom may help you sleep.

- **Cognitive therapy** helps people to spot and reassess any negative thoughts and beliefs about their ability to sleep.
- **Relaxation and imagery training** can be helpful for people who find it difficult to shut off their mind from the events of the day. Relaxation and imagery techniques can help people to distract themselves from stimulating thoughts.

Research and new developments

Research is currently trying to find out whether CBT is an effective treatment for sleep problems associated with rheumatoid arthritis.

Arthritis Research UK are also funding a study to understand how sleep, physical activity and mood are linked, and how these factors might be altered in order to improve the quality of life for people with rheumatoid arthritis.

Glossary

Analgesics – painkillers. As well as dulling pain they lower raised body temperature, and most of them reduce inflammation.

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.

Fatigue – a feeling of weariness that's more extreme than simple tiredness. It can affect you physically, but it can also affect your concentration and motivation, and often comes on for no apparent reason and without warning.

Fibromyalgia – a long-term (chronic) form of widespread pain in the muscles and soft tissues surrounding the joints throughout the body.

Non-steroidal anti-inflammatory drugs (NSAIDs) – a large family of drugs prescribed for different kinds of arthritis that reduce inflammation and control pain, swelling and stiffness. Common examples include ibuprofen, naproxen and diclofenac.

Osteoarthritis – the most common form of arthritis (mainly affecting the joints in the fingers, knees, hips), causing cartilage thinning and bony overgrowths (osteophytes) and resulting in pain, swelling and stiffness.

Rheumatoid arthritis – a common inflammatory disease affecting the joints, particularly the lining of the joint. It most commonly starts in the smaller joints in a symmetrical pattern – that is, for example, in both hands or both wrists at once.

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*
- *Fibromyalgia*
- *Neck pain*
- *Osteoarthritis*
- *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)*

Self-help and daily living

- *Diet and arthritis*
- *Everyday living and arthritis*
- *Fatigue and arthritis*
- *Keep moving*
- *Pain and arthritis*

Drug leaflets

- *Drugs and arthritis*
- *Non-steroidal anti-inflammatory drugs (NSAIDs)*
- *Painkillers (analgesics)*

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

British Snoring & Sleep Apnoea Association

Chapter House
33 London Road
Reigate
Surrey RH2 9HZ
Tel: 01737 245 638
Email: info@britishsnoring.co.uk
www.britishsnoring.co.uk

Edinburgh Sleep Centre

13 Heriot Row
Edinburgh EH3 6HP
Tel: 0131 524 9730
Email: fd@heriotrowconsultingrooms.com
www.edinburghsleepcentre.com

London Sleep Centre

137 Harley Street
London W1G 6BF
Tel: 020 7725 0523
Email: info@londonsleepcentre.com
www.londonsleepcentre.com

Sleepnet

www.sleepnet.com

Further reading

- **Desperately Seeking Snoozin': The Insomnia Cure from Awake to Zzz** by John Wiedman. University of Wisconsin Press 1998. ISBN 978-0-966418-95-8.
- **Overcoming Insomnia and Sleep Problems: A Self-Help Guide Using Cognitive Behavioural Techniques** by Colin A Espie. Robinson Publishing 2006. ISBN 978-1-845290-70-2.
- **Say Goodnight to Insomnia: A Drug-Free Program Developed at Harvard Medical School** by Gregg D Jacobs. Rodale 2009. ISBN 978-1-905744-38-1.

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Please note: We've made every effort to make sure that this content is correct at time of publication. If you would like further information, or if you have any concerns about your treatment, you should discuss this with your doctor, rheumatology nurse or pharmacist.



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

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 consultant physician and rheumatologist Dr Frank McKenna, who has expertise in the subject. It was assessed at draft stage by specialist occupational therapist Kate Hackett, head occupational therapist Janet Harkess, GP partner Dr Giles Hazan and GP with special interest (musculoskeletal medicine) Dr Sue Summers. 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, Angela Jacklin, is responsible for the content overall.

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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