

Patient information from the BMJ Group

Sleep apnoea

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Sleep apnoea

Sleep apnoea is a condition that affects your breathing at night and disturbs your sleep. During the day you feel drowsy and can't concentrate. Treatment can relieve the symptoms for many people.

We've brought together the best research about sleep apnoea and weighed up the evidence about how to treat it. You can use our information to talk to your doctor and decide which treatments are best for you.

What is sleep apnoea?

If you have sleep apnoea there are times during the night when you stop breathing for 10 seconds or longer.



Sleep apnoea can make you feel tired during the day.

You may wake up with a snorting, choking, or gasping sound. You start breathing again and go back to sleep. This can happen several times an hour, all night, so you can't stay in a deep sleep.

You may not even be aware that you woke up briefly. But if your sleep is upset throughout the night you'll feel sleepy during the day.

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Doctors call this type of disturbed sleep and daytime sleepiness **obstructive sleep apnoea/hypopnoea syndrome** (OSAHS).

There are also two other kinds of sleep apnoea: **central sleep apnoea** and **complex sleep apnoea**. To learn more, see [Other types of sleep apnoea](#) .

To find out if you have sleep apnoea, and how bad it is, your doctor will need to find out more about how well you breathe while you're asleep. He or she will also ask about how sleepy you are during the day.

Breathing during sleep

Your doctor needs to know how often there is a pause in your breathing. This helps them decide how severe your problem is. You may be asked to stay overnight in a sleep laboratory. Or your doctor may ask you to have your breathing measured at home.

Here's one guide that doctors use:

- If your breathing is affected between five and 20 times an hour you have mild sleep apnoea
- If your breathing is affected between 20 and 35 times an hour you have moderate sleep apnoea
- If your breathing is affected more than 35 times an hour you have severe sleep apnoea.

Daytime sleepiness

You may be asked to fill in a questionnaire called the Epworth Sleepiness Scale.^[1]

- If you feel drowsy or fall asleep when you are doing things that don't need much attention, like watching TV, you have mild sleep apnoea. It only affects your life a little.
- If you feel drowsy or fall asleep doing things that require some attention, such as during a meeting or concert, you have moderate sleep apnoea.
- If you feel drowsy or fall asleep doing things like eating, walking, or driving, you have severe sleep apnoea. It affects your life a lot.

You are more likely to get sleep apnoea if you are:^[2]

- Obese. This means you are very overweight. The extra fat around your neck makes it harder for you to keep your throat open when you sleep
- Older. Your chances of getting sleep apnoea increase with age

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- A man. Sleep apnoea is twice as common among men as it is among women
- Someone who has large **tonsils** or **adenoids**
- A recreational user of ecstasy. One small study found a greater chance of sleep apnoea for young people who had taken this illegal drug. ^[3]
- Someone who has other chronic (long-lasting) or serious illnesses. For example, children with chronic conditions are more likely to have sleep apnoea. ^[4]

What are the symptoms of sleep apnoea?

If you have sleep apnoea there are times during the night when you stop breathing. However, you may not be aware that you have sleep apnoea. It may be your partner or another family member who notices the signs first.

Having sleep apnoea can make you feel very drowsy during the day. You may find it hard to concentrate or remember things, feel tired when you wake up, and feel moody. ^[6] ^[7]

If you have severe sleep apnoea you get an overwhelming urge to fall asleep in situations where you need to be fully awake.

Here are some signs that you may have sleep apnoea: ^[8]

- Snoring (but not everyone who snores has sleep apnoea)
- Difficulty concentrating during the day
- Feeling very sleepy during the day
- Difficulty staying awake
- Waking up tired and not refreshed
- Your partner notices interruptions to your breathing when you are asleep.

There are lots of other things that can upset your sleep. You should see your doctor to find out what is causing your problems. ^[8]

How common is sleep apnoea?

We're not quite sure how many people have sleep apnoea, because it often goes undiagnosed.

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In the UK, sleep apnoea probably affects about 1 or 2 out of 100 men over the age of 35. The number of women affected is lower. ^[9] ^[8]

What treatments work for sleep apnoea?

It's important to get treatment if you have sleep apnoea, especially if it's severe.

Here, we talk about treatments for **obstructive sleep apnoea**, which is the most common type. To learn about other kinds, see [Other types of sleep apnoea](#) .

- Wearing a mask at night to help you breathe can improve your sleep and give you more energy in the day.
- Wearing a special mouthpiece that keeps your airway open is likely to help.
- It may take time to adjust to a mask or a mouthpiece, and you need to keep wearing them. You'll probably need to try several types before you find one you're comfortable with.
- Losing weight is recommended by doctors if you have sleep apnoea and are overweight, as this will reduce pressure on your airway. But there hasn't been much good research on whether losing weight helps sleep apnoea.

There are also things you can try yourself that may help, but we can't say for certain.

Doctors recommend: ^[5] ^[8]

- Avoiding alcohol and sedatives. They can make sleep apnoea worse
- Giving up smoking. This can help your breathing problems
- Sleeping on your side.

Which treatments work best? We've looked at the best research and given a rating for each treatment according to how well it works.

Treatment Group 1

Treatments for sleep apnoea

Treatments that work

- [A mask with an air pump](#)

Treatments that are likely to work

- [A mouthpiece](#)

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Treatments that need further study

- [Losing weight](#)

Other treatments

We haven't looked at the research on these treatments in as much detail as we've looked at the research on most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of them or be interested in them.

- [Surgery](#)
- [Mouth and throat exercises](#)
- [Drug treatments](#)

What will happen to me?

If you have severe sleep apnoea it won't get better on its own. So it's important to get treatment.

Sleep apnoea can affect how much you enjoy life. If you are sleepy during the day, you may have problems doing your job. It can also affect your driving. You should tell the Driver and Vehicle Licensing Agency (DVLA) and your car insurance company if you have sleep apnoea.

If you feel drowsy during the day, you probably won't be able to enjoy life as much. You may find you can't think clearly. You may feel moody and your relationships could suffer. ^[10]

You are also more likely to have driving accidents. Some research says sleep apnoea increases someone's chance of road accidents by three to seven times. ^{[10] [11]}

People with severe sleep apnoea may also have an increased chance of **high blood pressure**, **heart disease**, and **strokes**, although there's still not enough evidence to say this for sure. ^{[10] [8]} Doctors don't really know why you're more likely to get these serious health problems if you have sleep apnoea. It might be because your oxygen levels fall when you stop breathing.

People with sleep apnoea may also be more likely to have pneumonia later in life, especially if their sleep apnoea is severe. ^[12]

Treatments:

A mask with an air pump

Sleep apnoea

In this section

If you have severe sleep apnoea, wearing a mask at night that fits over your nose (or nose and mouth) will improve your sleep and make you feel more awake during the day. The name for this treatment is **continuous positive airway pressure** (CPAP). The mask is attached to an air pump, which blows air into your throat to keep your airway open.

The National Institute for Health and Care Excellence (NICE), the body that decides which treatments are available on the NHS, says that CPAP should be offered to:^[13]

- Any adult with moderate or severe sleep apnoea
- Any adult with mild sleep apnoea whose life is affected by the condition and who hasn't been helped by other treatments.

Two reviews of the research, which took a close look at lots of smaller studies, found that CPAP can help people feel less sleepy during the day.^{[14] [15]}

Researchers have also explored whether CPAP might help with high blood pressure, as people with sleep apnoea often have this condition as well. Two reviews found that CPAP didn't help reduce people's blood pressure.^{[16] [17]} However, in these studies researchers looked only at people with severe sleep apnoea. Reviews that included people with mild to severe sleep apnoea found that CPAP did help to reduce blood pressure, but that the reduction was often small.^{[18] [19]} Another review of people with mild sleep apnoea found that CPAP only reduced blood pressure when people used CPAP for more than 4 hours a night.^[20]

Another recent small study was carried out in patients with moderate to severe sleep apnoea who also had the metabolic syndrome. The metabolic syndrome is a group of features linked to the body's metabolism that can increase someone's chance of various diseases (to learn more, see [the metabolic syndrome](#)). The study found that CPAP lowered their blood pressure and seemed to improve some of the other features of the metabolic syndrome.^[21]

There are lots of different types of masks used for treating sleep apnoea. The research shows there's no difference in how well they work.^[22]

But masks can cause side effects. About 4 in 10 people get a dry mouth, nose, and throat.^[23] More than 7 in 10 people get sneezing and nearly 6 in 10 get a runny nose. But these symptoms are also quite common before people start using the device, so the device might not always be to blame.^[24]

You might find the mask uncomfortable or inconvenient. Other problems include a blocked nose, sore eyes, headaches, and chest discomfort. One of the main problems with CPAP machines is that people find it hard to keep using them regularly.

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Some CPAP machines vary the pressure of air delivered, or make the air less dry. But studies have not found any important differences in how long people use these machines, compared with the standard machines. ^[25]

General encouragement and support when you are using a CPAP machine can increase the time you are likely to spend using one at night. But more formal education about CPAP does not seem to make much difference. ^[26]

Of all the methods of support, a common form of talking therapy, called **cognitive behaviour therapy (CBT)**, seems to help the most to increase the time spent using a CPAP machine at night. ^[26]

A mouthpiece

In this section

A mouthpiece works by pushing your lower jaw forwards to keep your airway open. It fits round your teeth and looks a bit like a gum shield used for sport. Mouthpieces are sometimes used to stop people snoring.

If you have severe sleep apnoea, a mouthpiece may make you less sleepy during the day and help you enjoy life more. ^{[27] [28] [29]} A mouthpiece can also help with milder sleep apnoea. ^{[30] [31] [32]}

The research on mouthpieces isn't very good but doctors generally agree they can help. One big study looked at people with mild sleep breathing problems. About 7 in 10 people who used a mouthpiece reduced the number of times they stopped breathing by half. ^[33]

One summary of the research found that [a mask with an air pump \(CPAP\)](#) works better than a mouthpiece. ^[15] Most people prefer wearing a mask to a mouthpiece. ^[34] One study found people were more likely to carry on using a mask than a mouthpiece. ^[15]

You may get side effects from using a mouthpiece, such as a dry mouth, gum irritation, tooth grinding, and dribbling. ^{[31] [35]} But these problems seem to be temporary.

Losing weight

In this section

If you are very overweight your doctor is likely to advise you to try to lose weight. But there isn't much research on whether losing weight can help if you have sleep apnoea. ^[36]

For very obese people with severe sleep apnoea, losing a large amount of weight (between 30 percent and 70 percent of their body weight) can lead to big improvements

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in the number of times they wake at night. However, to lose that much weight most people need surgery.^[37]

One study looked at 690 people with sleep breathing problems. It found that losing 10 percent of their body weight improved their sleep.^[38]

Losing weight can reduce the pressure on your airway and make breathing easier. But it's difficult to lose weight and keep it off, so you may need to combine dieting with other treatments.

To read more about how to lose weight, see our information on [Obesity](#) .

Surgery

In this section

Some people with severe sleep apnoea have surgery. What operation you have depends on what exactly is causing your sleep apnoea. For example, for some children, removing very large tonsils and adenoids may help their sleep apnoea.

An operation to remove tissue from the back of your mouth and the top of your throat is called an **uvulopalatopharyngoplasty** (UPPP). It's done in hospital and you'll have a **general anaesthetic** , so you won't be awake during the operation. It can leave you with a sore throat and you may need several weeks to recover.

An operation that can be done without a hospital stay is **laser-assisted uvulopalatoplasty** (LAUP). A laser is used to remove part of your **soft palate** (the soft tissue at the back of the roof of your mouth) and shorten your **uvula** (the cone of tissue that hangs down at the back of your throat). This can help clear your airway.

Although these operations may help some people, they aren't usually recommended.^[8] This is because snoring and sleep apnoea eventually come back for most people who have surgery, usually within a year.

Mouth and throat exercises

In this section

Exercises involving muscles of the tongue, mouth, and throat may help improve sleep apnoea, and help with snoring. But we only found one small study, so we can't be sure this treatment really works.^[39]

Drug treatments

In this section

Some people take drugs for sleep apnoea, especially if they can't wear a mask. They may be given medicines used for other breathing problems, **antidepressants** ,

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tranquillisers , or medicines to alter their sleep patterns. Two large summaries of the research (called [systematic reviews](#)) found that, in the long term, most drugs don't help with sleep apnoea. ^[40] ^[41] A small study in patients with sleep apnoea who travelled to high altitudes (where the air was thinner and they were getting less oxygen) did find that the drug acetazolamide could be helpful as a temporary alternative to a mask and air pump in allowing them to adjust. ^[42]

Further informations:

Other types of sleep apnoea

The kind of sleep apnoea we talk about here is **obstructive sleep apnoea**. It happens when the muscles in your throat relax while you're sleeping, blocking the flow of air to your lungs. But there are two other types. ^[5]

Central sleep apnoea

In this type, your brain doesn't send the right signals to the muscles that make you breathe, so your breathing stops for a short time. This is different from obstructive sleep apnoea, where your body is trying to get air into your lungs but your airway is blocked. In both types, your brain recognises that there isn't enough oxygen in your blood and wakes you briefly to restart your breathing. With central sleep apnoea, you may be more likely to remember waking up than with obstructive sleep apnoea.

Common symptoms of central sleep apnoea include extreme tiredness during the day and trouble sleeping (insomnia). You may also wake up with shortness of breath or a headache. Snoring is less common with central sleep apnoea than with obstructive sleep apnoea.

For some people central sleep apnoea is related to [heart disease](#) . It can also be connected with other problems such as [strokes](#) and [Parkinson's disease](#) . But sometimes doctors don't know why people get it.

Treatments include wearing a special mask connected to an air pump at night. If your sleep apnoea is related to heart disease or another condition, treating that condition may help.

Complex sleep apnoea

Many people with central sleep apnoea also have obstructive apnoea. If you have both kinds, it's called complex sleep apnoea.

Glossary:

tonsils

Your tonsils are two lymph glands that are at the back of your throat. Lymph glands are part of your immune system. They create cells called lymphocytes. When your body is fighting an infection or an allergy, your tonsils can become swollen. They can also swell

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up if you have cancer. (People often use the word 'tonsils' to mean the flap that hangs from the top of their throat, near the back, but that flap is actually called the uvula.)

adenoids

The adenoids are a group of swellings at the back of your nose. They are made of tissue that helps your body fight infection. Adenoids can sometimes become enlarged. When this happens, they may block the tube that goes from your nose to your throat. This can cause breathing problems.

heart disease

You get heart disease when your heart isn't able to pump blood as well as it should. This can happen for a variety of reasons.

stroke

You have a stroke when the blood supply to a part of your brain is cut off. This damages your brain and can cause symptoms like weakness or numbness on one side of your body. You may also find it hard to speak if you've had a stroke.

high blood pressure

Your blood pressure is considered to be high when it is above the accepted normal range. The usual limit for normal blood pressure is 140/90. If either the first (systolic) number is above 140 or the lower (diastolic) number is above 90, a person is considered to have high blood pressure. Doctors sometimes call high blood pressure 'hypertension'.

cognitive behaviour therapy

Cognitive behaviour therapy (CBT) is a type of talking treatment (psychotherapy). It is based on the idea that the negative thoughts and beliefs people have play an important role in how they feel and how they act. CBT helps people identify, look at and change unwanted thoughts, feelings and behaviours.

general anaesthetic

You may have a type of medicine called a general anaesthetic when you have surgery. It is given to make you unconscious so you don't feel pain when you have surgery.

antidepressant

Antidepressants are medicines used to treat depression and sometimes other conditions. They work by changing the levels of chemicals in your brain called neurotransmitters. There are three main types of antidepressants, which work in different ways: selective serotonin reuptake inhibitors (SSRIs), monoamine oxidase inhibitors (MAOIs) and tricyclic antidepressants (TCAs).

tranquilliser

A tranquilliser is a drug that can help you relax and feel less anxious.

systematic reviews

A systematic review is a thorough look through published research on a particular topic. Only studies that have been carried out to a high standard are included. A systematic review may or may not include a meta-analysis, which is when the results from individual studies are put together.

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