- Headache



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DID YOU KNOW? Only ten per cent of people with a migraine will get a visual warning before the headache sets in

WHAT ARE HEADACHES?

From shooting sensations to dull aches, we explore the many causes of pain around the brain

WORDS AILSA HARVEY

The term headache covers a great variety of symptoms. Some are mild, caused by bright lights or muscle tension. Others can be debilitating and erupt in a sudden attack. Almost everyone will experience a headache in their lifetime, and although they can be brought on by more serious conditions, usually they're not overly worrisome.

There are more than 150 types of headaches, each categorised as primary or secondary. Primary headaches are those that aren't caused by another medical condition. Instead, they are the result of physiology in the head – such as muscles and nerves – being over-used or not working as they typically would. For example, physical activity can cause exertion headaches, hunger headaches are caused by stress hormones from a drop in blood sugar and tension headaches are a result of knots in muscles in your head and neck.

Secondary headaches are a symptom of another condition. Dehydration and sinus infections can lead to a less severe form of secondary headache. But some secondary headaches are more painful and can be an indication of bleeding in the brain, a traumatic head injury or a sudden rise in blood pressure.

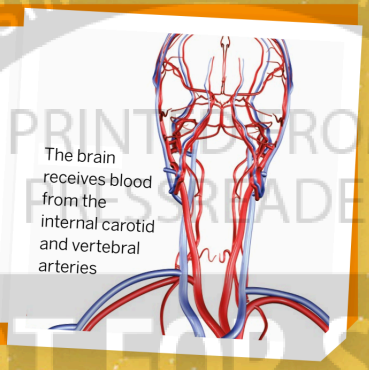
Did you know?
Sleeping for over eight hours can cause a headache

It is useful to know what symptoms are unusual in order to seek medical advice. If you have a sudden, new or especially painful headache, you should get it checked out. Other headaches with the potential to be more damaging are those that occur after a head injury, those accompanied with a fever or shortness of breath and headaches that are new to a person over the age of 55.

NO-PAIN BRAIN

Nociceptors are the nerve endings that detect pain. There are none of these pain receptors in the brain, meaning that the organ itself doesn't feel pain. The brain can't directly sense damage to its own tissue. Instead, the aching feeling inside your head comes from nerves inside blood vessels in the head.

Other structures with pain receptors that contribute to the sensation of a headache include muscles in the scalp, neck and face, and the protective layer of tissue around the brain called the meninges. These areas can all become irritated and inflamed, sending pain signals to the brain.



The brain receives blood from the internal carotid and vertebral arteries

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TYPES OF HEADACHE

Where are the pain points behind the aches?



TENSION

This is the most common headache, causing pain on both sides of the head or face. The sensation is a tightening around the head and can feel tender when touched.



SINUS

Sinus headaches are caused by inflammation of the sinuses – the air-filled spaces near the nose that make mucus. The pain is felt around this area.

Did you know?

1 in 5 women and 1 in 15 men experience migraines



MIGRAINE

This headache is a one-sided pain that can be triggered by light, sound and movement. The pain consists of an intense throbbing and pulsing sensation.



CLUSTER

Pain is felt on one side of the head, behind the eye or in the temple. This rare headache, caused by activity in the hypothalamus, comes about quickly and lasts between 15 minutes and three hours.

WHAT CAUSES A MIGRAINE?

The intensity and longevity of a migraine can vary significantly. For some people, migraines last just a few hours, while for others they can prevent a person from functioning properly for up to three days. People who are suffering from intense migraines often feel nauseous and may be physically sick, see flashing lights or other visual disturbances and may opt to remain in a dark room to avoid further stimulation.

The cause of migraines is thought to be unusual nerve signals, chemicals in the brain and blood vessels in the head. Stress, low blood sugar, alcohol, a lack of sleep and events like periods or menopause that change hormone levels in the body can all trigger a migraine response. Some migraines come with a warning sign, like seeing flashing lights prior to the pain, while the most common type bears no warning signs.

Following a migraine, many people suffer from low energy. Around half of migraine sufferers have a close relative who also gets migraines, so the condition is believed to be dictated somewhat by genetics.



You should see a doctor if a migraine lasts longer than 72 hours

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DID YOU KNOW? Fewer than 50 out of 100,000 adults experience a thunderclap headache each year

ATTACK OF THE THUNDERCLAP

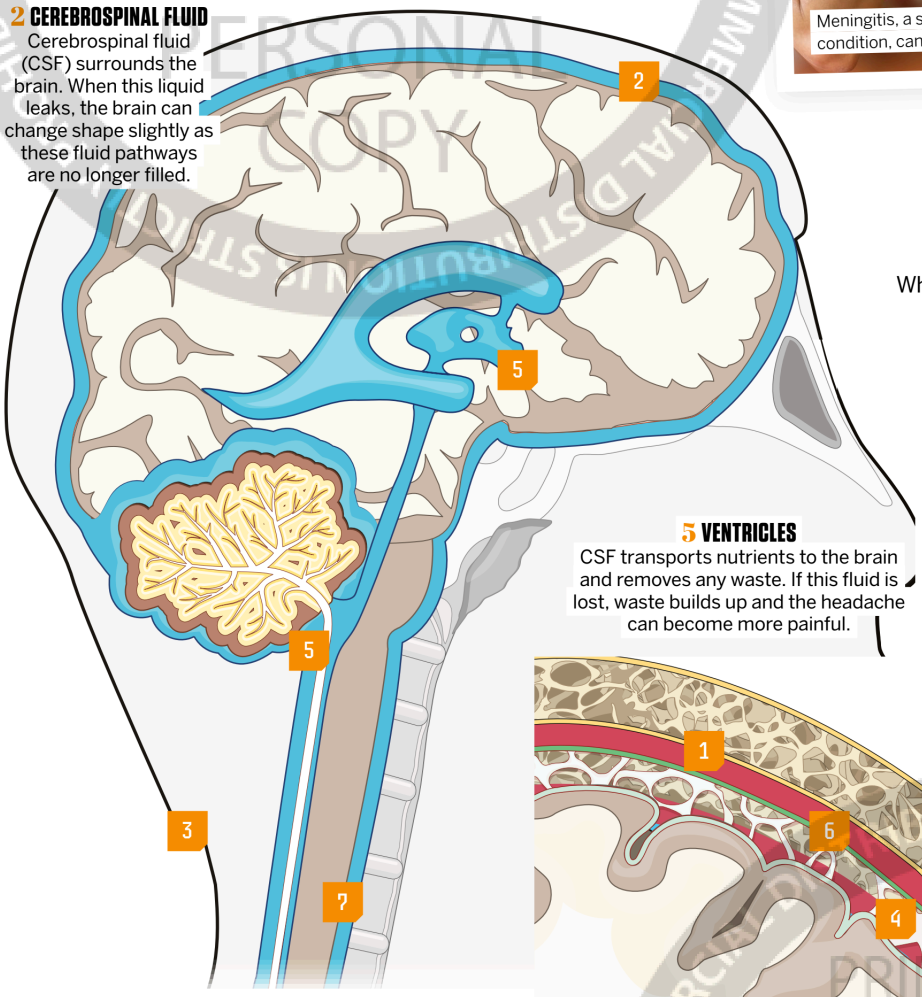
A thunderclap headache is often described by those who have suffered from one as the worst headache they have had in their life. An agonising pain comes on extremely suddenly, and is often a sign of bleeding in the brain or another problem within the blood vessels. This potentially makes the headache a more serious symptom, and medical attention should be sought immediately. The pain intensity makes it hard for sufferers to explain the sensations felt in a thunderclap headache. But besides the pain, some of the other symptoms include weakness, vision issues, confusion and speech difficulty. From the onset of the headache, the worst pain is felt within 60 seconds of any symptoms, and the pain continues for at least a few minutes. Those hit with a thunderclap headache could experience pain for the following few hours.



Meningitis, a serious and potentially life-threatening condition, can cause severe thunderclap headaches

SPINAL HEADACHES EXPLAINED

What happens when the fluid around your spinal cord starts to leak?

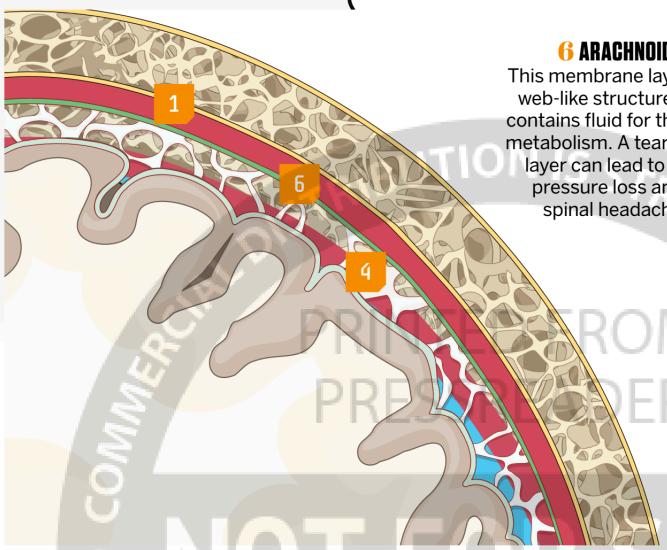


2 CEREBROSPINAL FLUID
Cerebrospinal fluid (CSF) surrounds the brain. When this liquid leaks, the brain can change shape slightly as these fluid pathways are no longer filled.

1 DURA MATER
A puncture hole in this membrane, called the dura mater, releases the cushioning fluid that surrounds the brain and spinal cord.

5 VENTRICLES
CSF transports nutrients to the brain and removes any waste. If this fluid is lost, waste builds up and the headache can become more painful.

4 CUSHIONING CSF
Cerebrospinal fluid serves as a cushion for the brain and spinal cord. Without it, they are less protected and more susceptible to damage and pain.



6 ARACHNOID
This membrane layer is a web-like structure that contains fluid for the CSF metabolism. A tear in this layer can lead to CSF pressure loss and a spinal headache.

3 HEADACHE PAIN
The pain in a spinal headache occurs at the back or front of the head and is less painful when lying down as it helps maintain the pressure of the CSF.

7 SPINE
During a spinal tap, which involves extracting CSF from around the spine to check for infection, spinal fluid can leak from the puncture and cause a headache.

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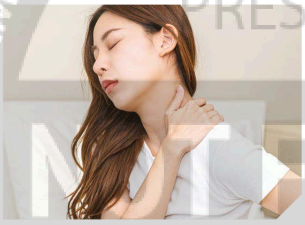
FOLLOWING THE PHASES

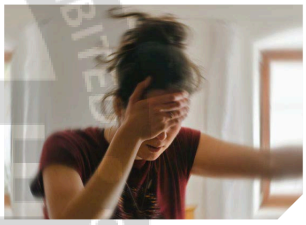
What are the stages of a migraine?



1 PRODROME
This pre-headache stage is a warning of the pain to come, felt 24 to 48 hours prior to the onset of the migraine. A person may experience mood changes, fatigue, neck stiffness and concentration difficulty.



2 AURA
Only some experience this. It includes visual disturbances such as seeing bright spots, flashes and shapes within vision. Tingling or numbing sensations may also occur in the arms, legs or face, alongside speech difficulties.



3 ATTACK
The headache phase lasts between 4 and 72 hours if left untreated. When this stage extends beyond 72 hours, the condition is known as status migrainosus.



4 POSTDROME
Hours or even days after a migraine, the body enters a state of fatigue. Mild pain, concentration difficulty and a change in mood are common. The sufferer might be irritable or simply feel relieved.

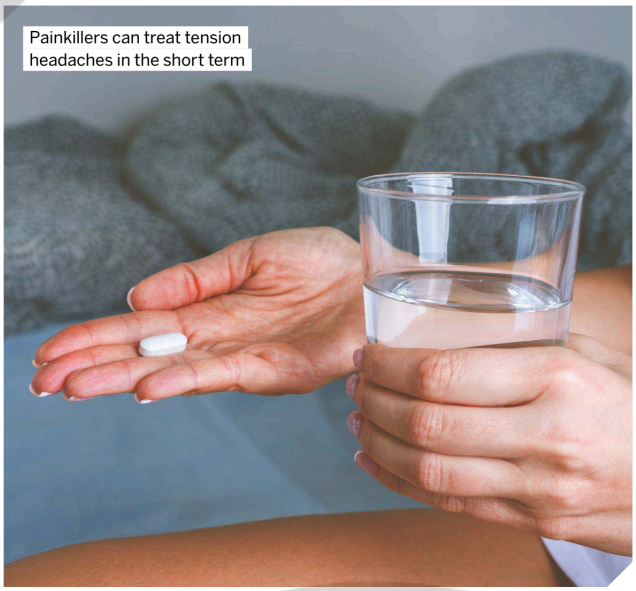
HOW TO IDENTIFY YOUR HEADACHE

To pinpoint the type of headache you're experiencing, you need to consider the duration, intensity and location of the pain felt. To analyse this, you can track your symptoms, writing down the times headaches occur, how long they last for and any symptoms felt before, during and after the headache itself. This can help identify any common triggers and patterns. External factors like the weather and types of food eaten can be the root cause, so tracking trends can identify what triggered the migraine.

Although the pain points of a headache can reveal the type of headache at play, sometimes this information isn't enough to narrow down the source of the pain. Headaches can feel all-consuming, depending on their severity. Visiting a healthcare professional is the best way to diagnose the type of headache you're experiencing. Serious headache types can be tested and identified through magnetic resonance imaging (MRI) or computed tomography (CT) scans and lumbar puncture.



A headache diary is a good way to visualise the intensity of your pain and any other symptoms



Painkillers can treat tension headaches in the short term

IS IT TREATABLE?

There are many ways to treat a headache, ranging from medication to lifestyle changes. Painkillers, for example, are a common way to prevent mild headaches. Common aspirin, paracetamol and ibuprofen can reduce inflammation and block pain signals in the brain. However, if you use these too much – more than twice a week for headaches – painkillers can become the cause of the pain. As your body gets used to the painkillers, it can become reliant on the medication and cause rebound headaches when a painkiller isn't taken. This is why it's essential to only take medication advised by medical professionals. One of the best ways to treat certain types of headaches is through lifestyle changes. You can do this by avoiding unhealthy foods, caffeine and alcohol, and by keeping track of the time of day headaches emerge, the foods eaten beforehand and any possible hormonal changes.

Did you know?
Pressure changes in stormy weather can cause headaches

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DID YOU KNOW? One in ten frequent headache sufferers take painkillers too often

5 FACTS COMMON CAUSES

1 CAFFEINE
Consuming caffeine constricts blood vessels around the brain. When the caffeine leaves the body, the blood vessels dilate and put pressure on the surrounding tissue, causing pain.

2 DEHYDRATION
If you don't drink enough water, the brain tissue contracts slightly, pulling away from the skull and pressing on nerves.

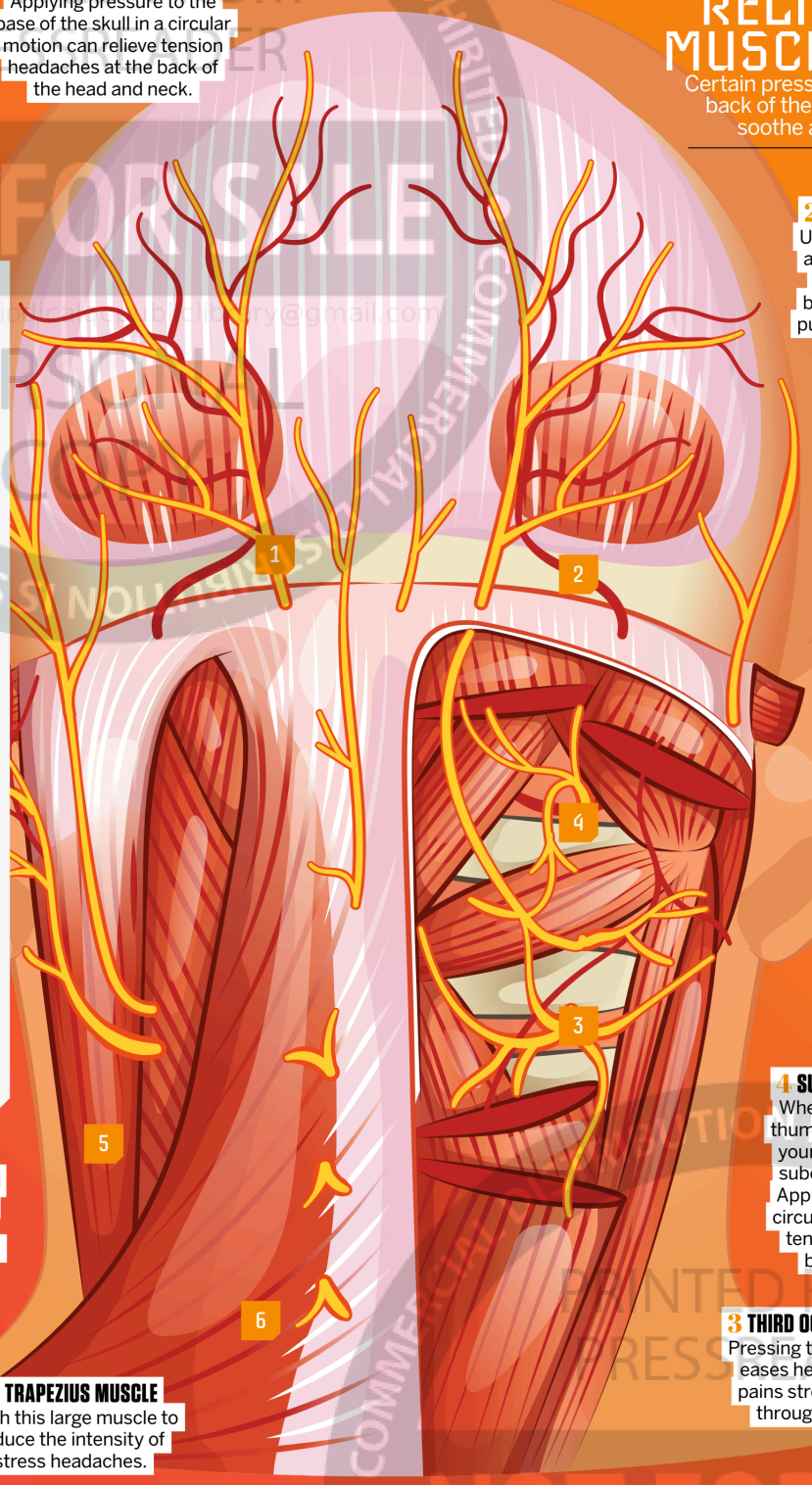
3 STRESS
Muscles become tense when you feel stress. This can cause a tension headache, felt as a steady pain in the scalp.

4 LACK OF SLEEP
When you lose sleep, the brain can't repair itself and regulate neural pathways properly. This decrease in brain plasticity can cause sleep-deprivation headaches.

5 HORMONES
Oestrogen is the main hormone that can trigger headaches. Levels of this hormone drop in women before a menstrual cycle, which can cause a migraine.

RELIEVING MUSCLE PAIN

Certain pressure points at the back of the head can help soothe a headache



1 GREATER OCCIPITAL NERVE
Applying pressure to the base of the skull in a circular motion can relieve tension headaches at the back of the head and neck.

2 OCCIPITAL ARTERY
Using your fingers to apply light pressure here can improve blood flow to relieve pulsating headaches.

4 SUBOCCIPITAL NERVE
When you knead your thumbs into the base of your skull, you access suboccipital muscles. Applying pressure in a circular motion lessens tension pain caused by bad posture.

3 THIRD OCCIPITAL NERVE
Pressing this area lightly eases headaches and pains stretching down through the neck.

5 STERNOCLEIDOMASTOID
This muscle runs along the sides of the neck. When you press into this muscle in a downward stroke, neck tension is relieved to prevent headache pain.

6 TRAPEZIUS MUSCLE
Pinch this large muscle to reduce the intensity of stress headaches.

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